

FIG. 1

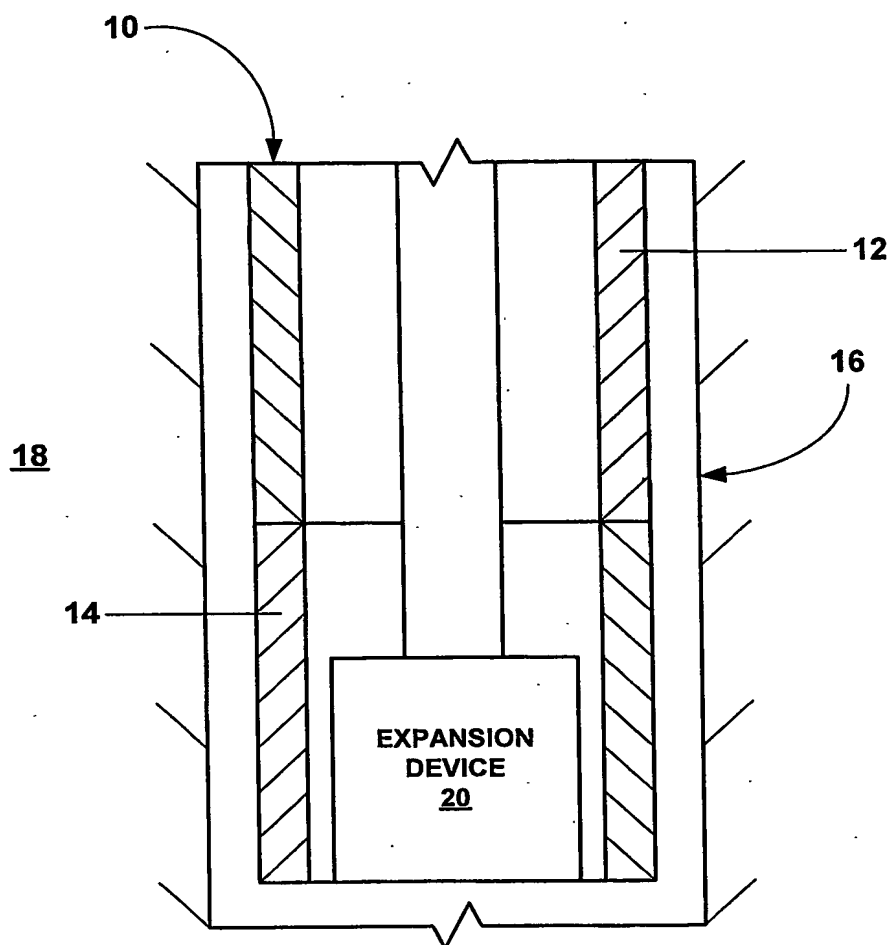


FIG. 2

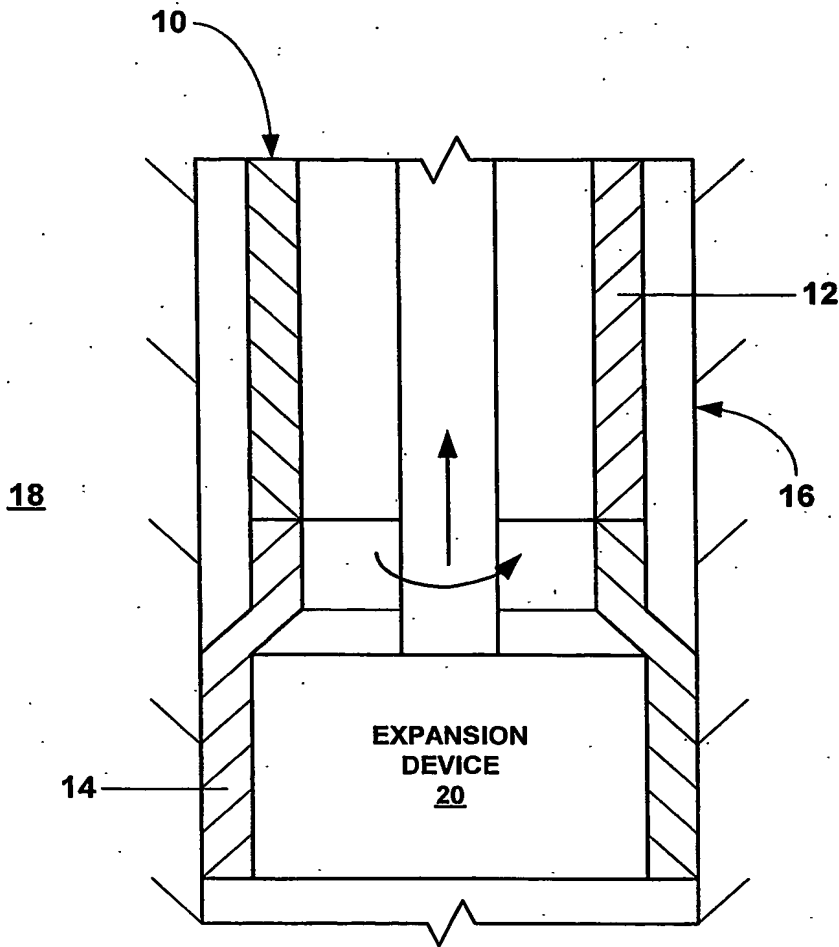


FIG. 3

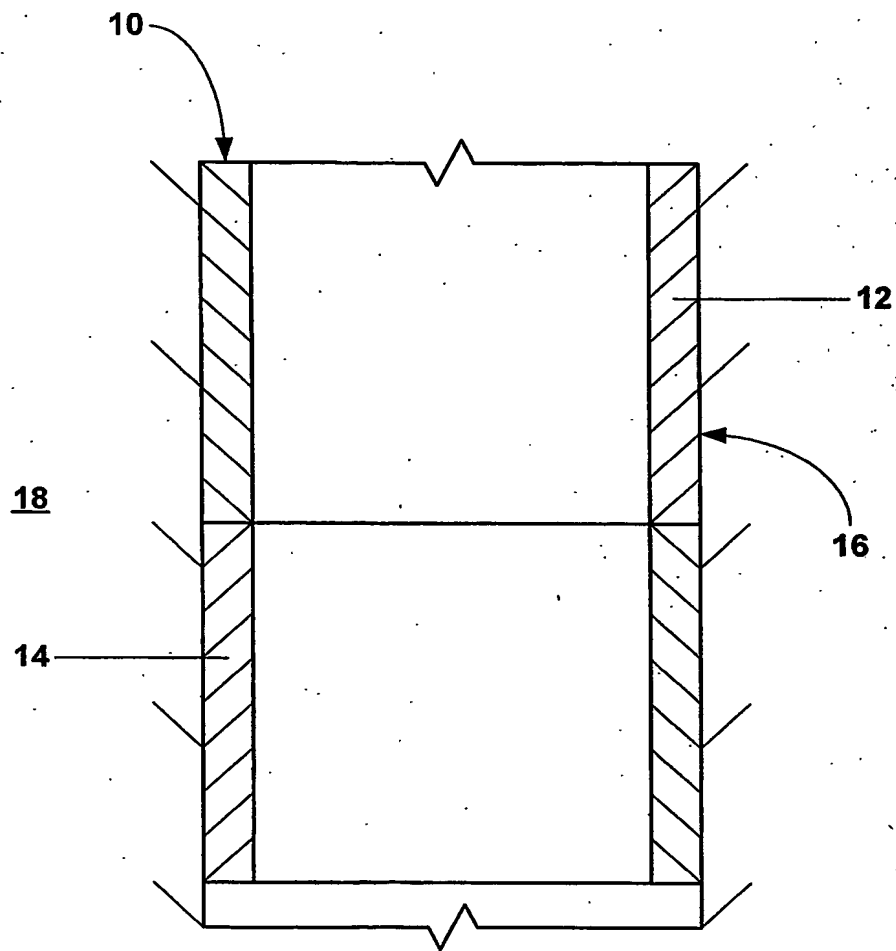


FIG. 4

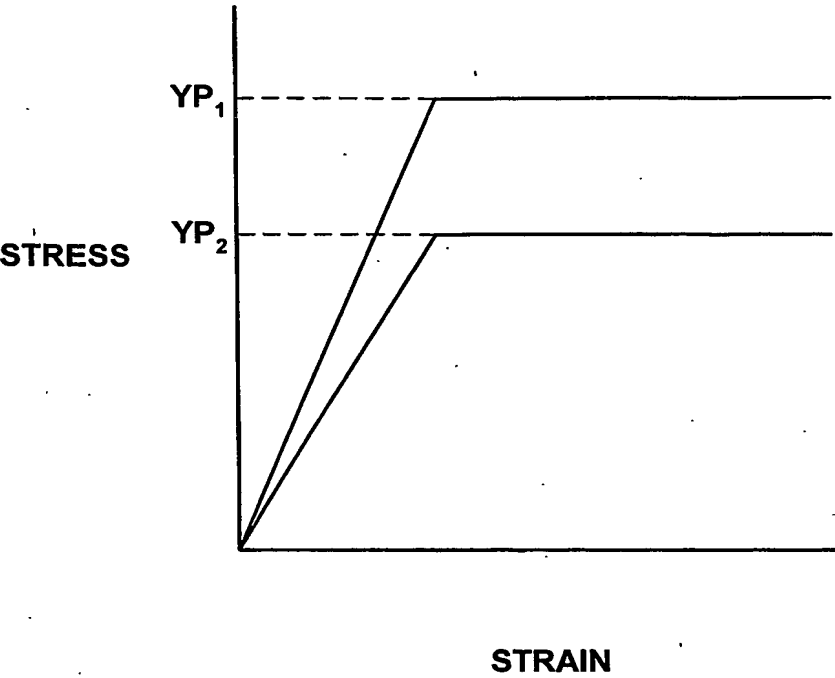


FIG. 5

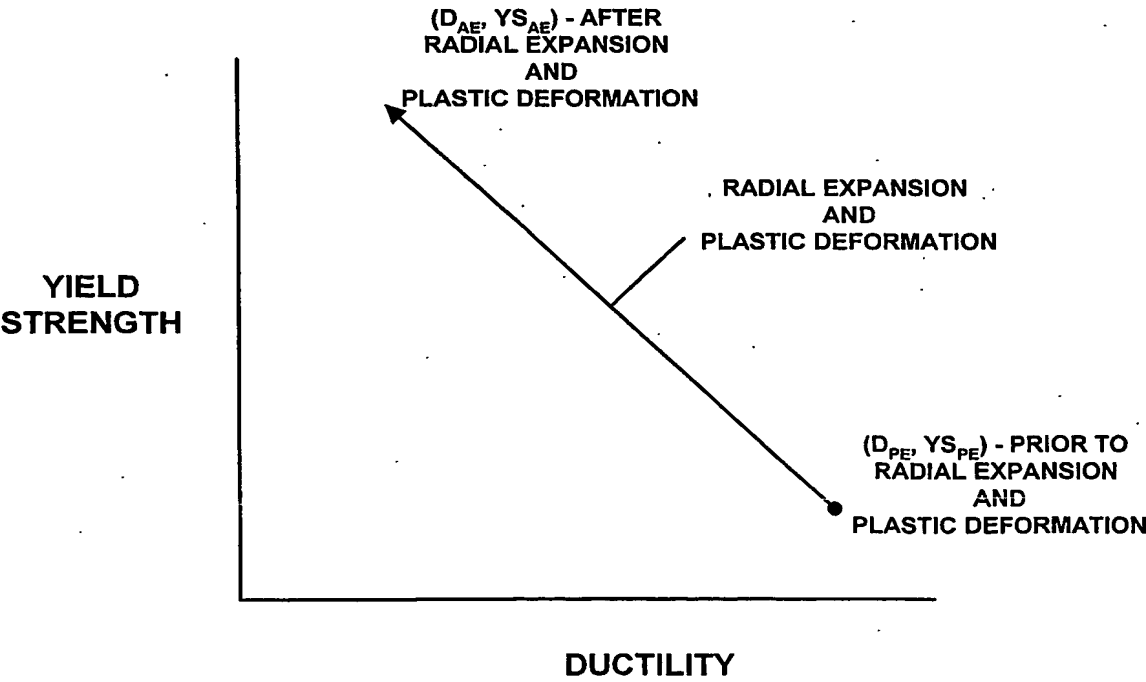


FIG. 6

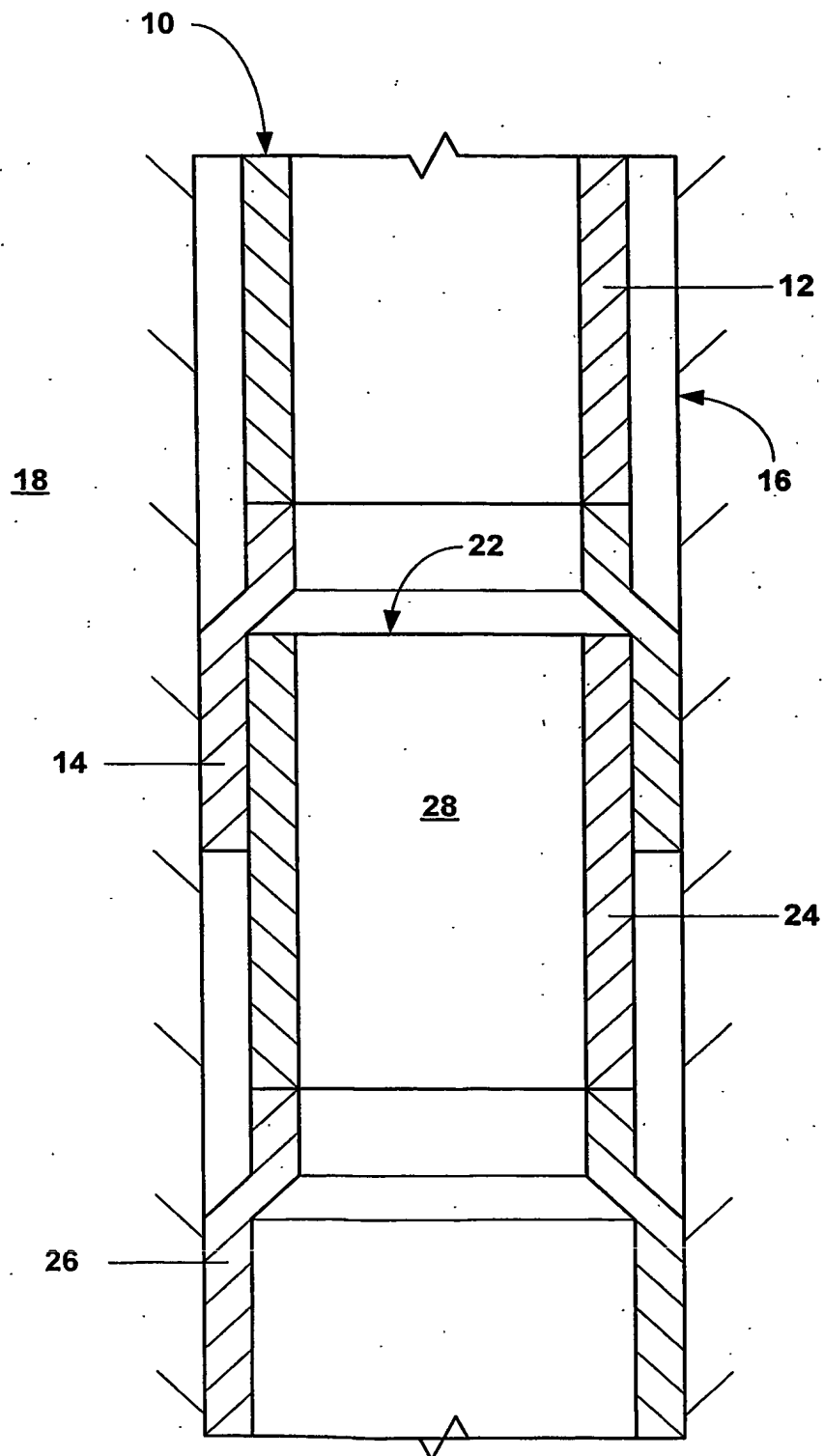


FIG. 7

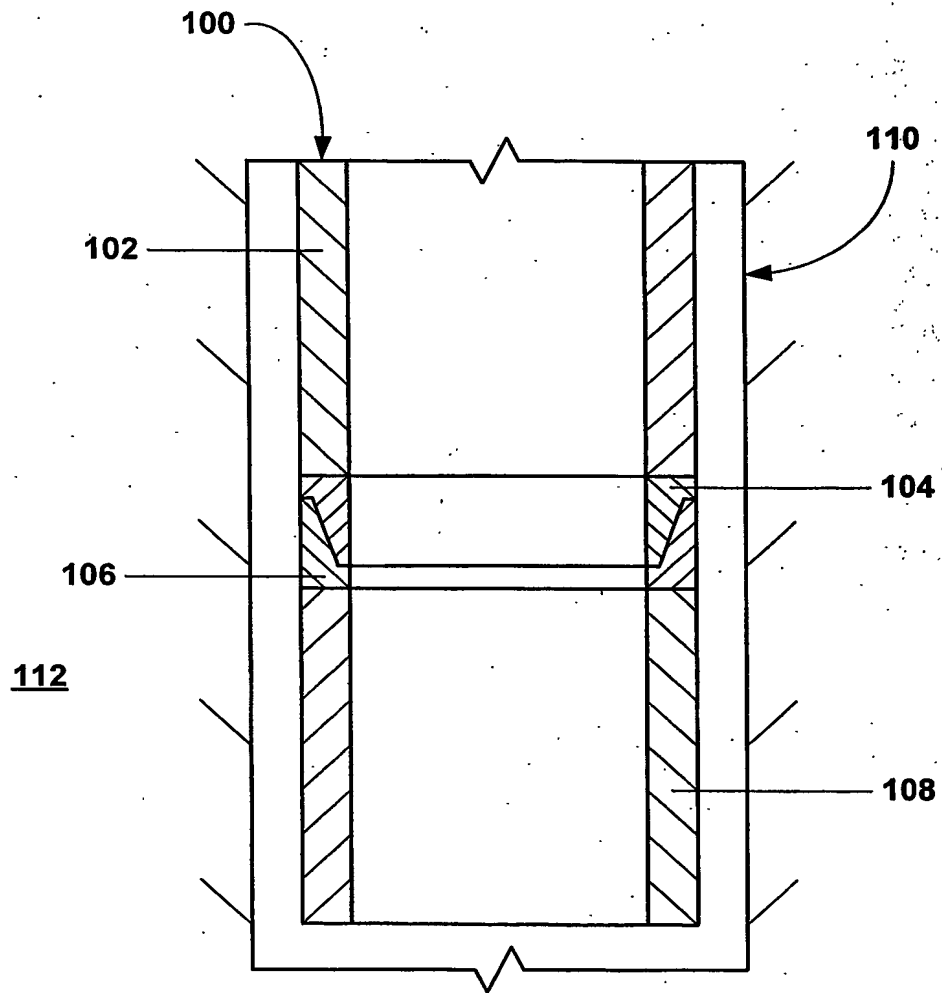


FIG. 8

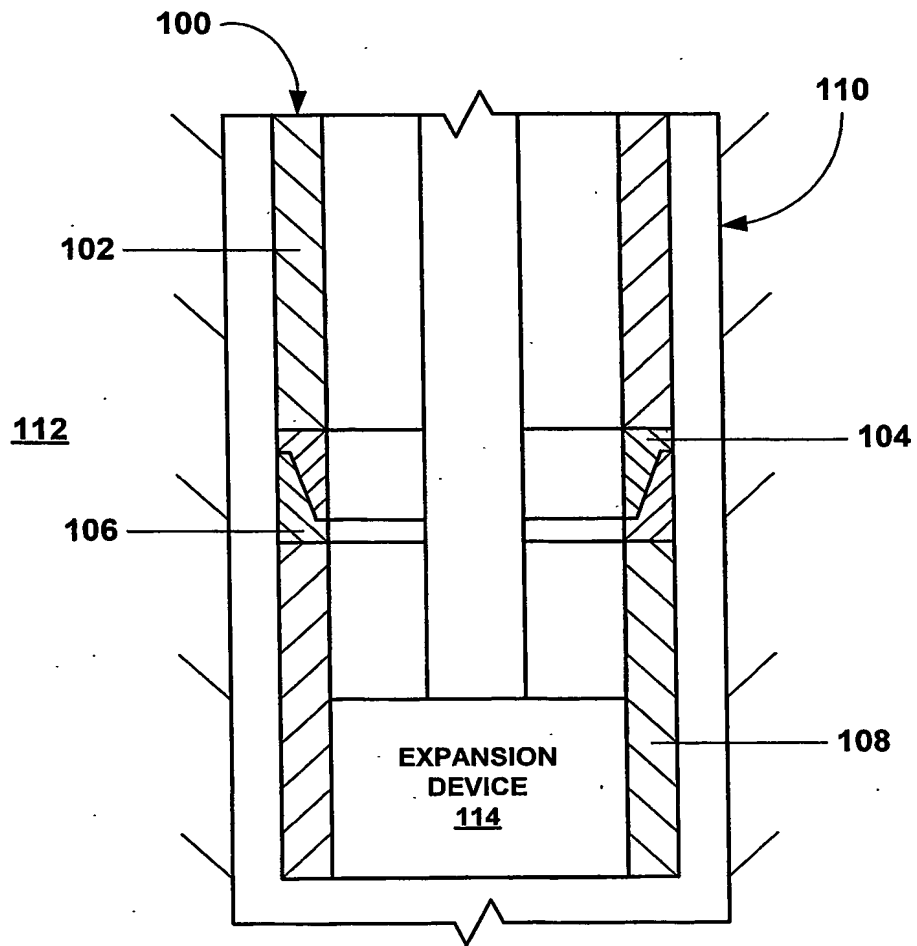


FIG. 9

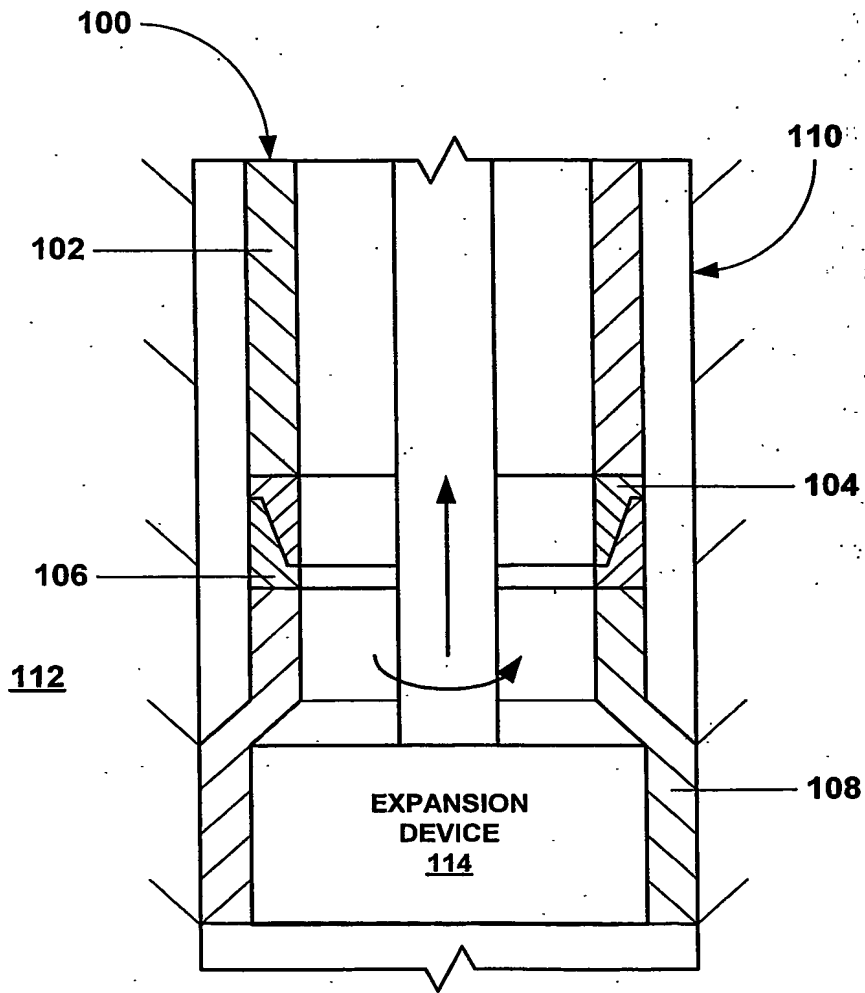


FIG. 10

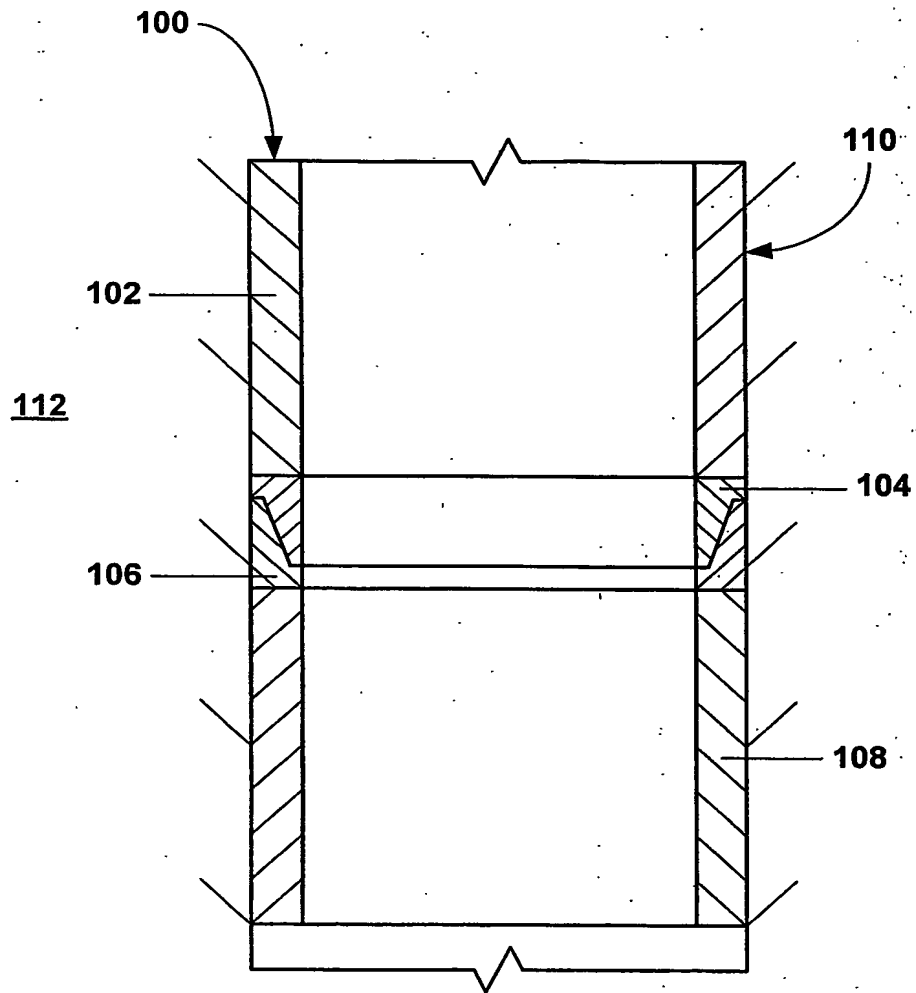


FIG. 11

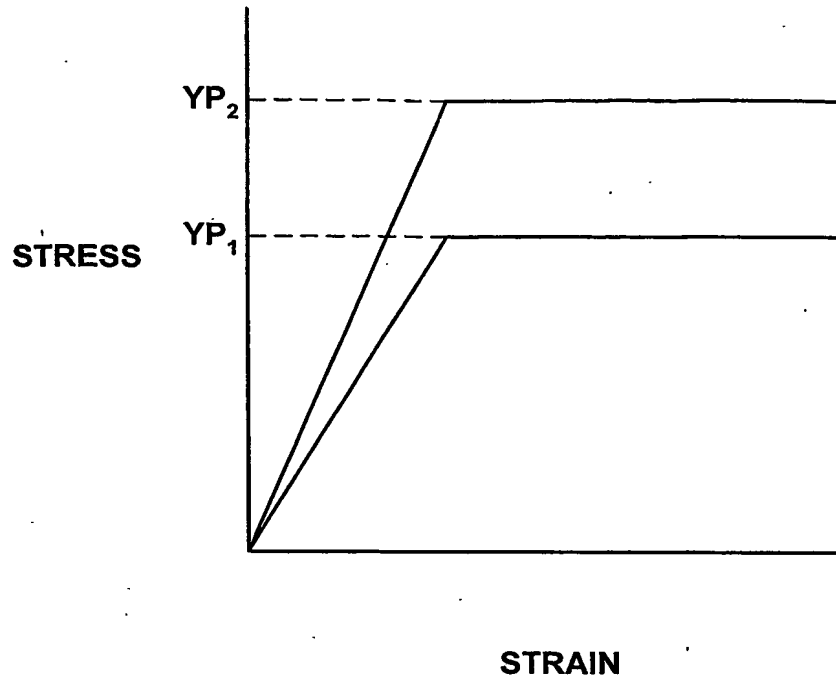


FIG. 12

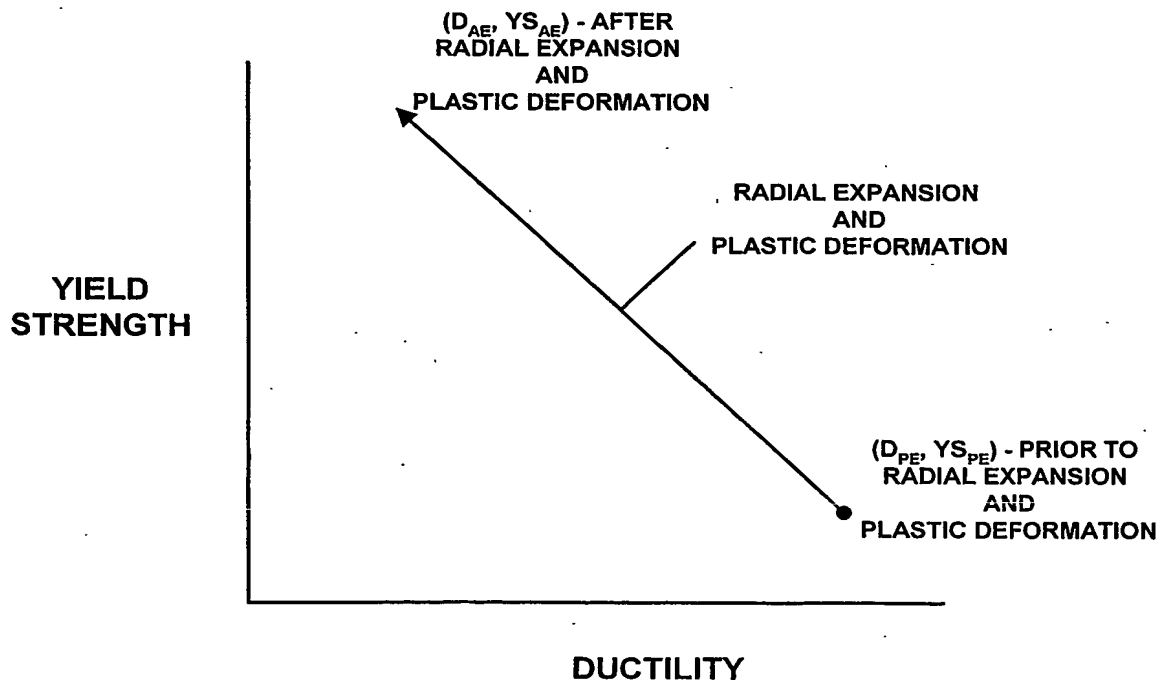


FIG. 13

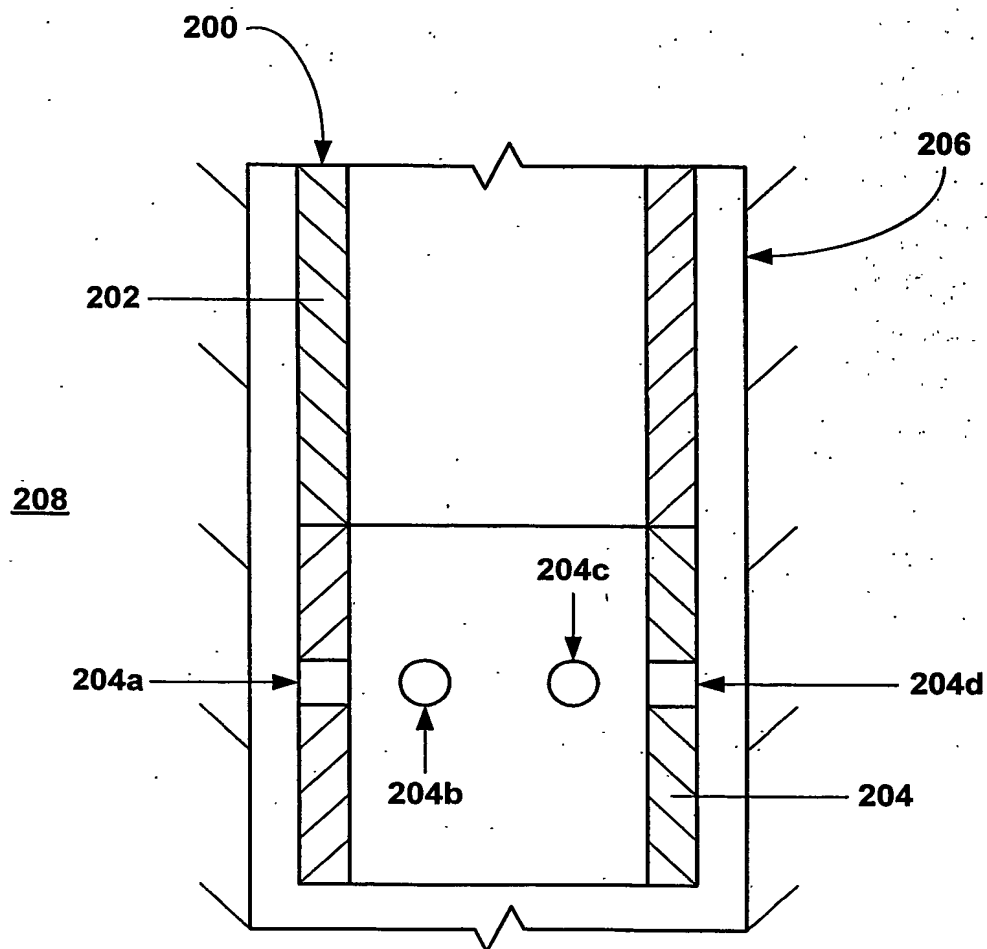


FIG. 14

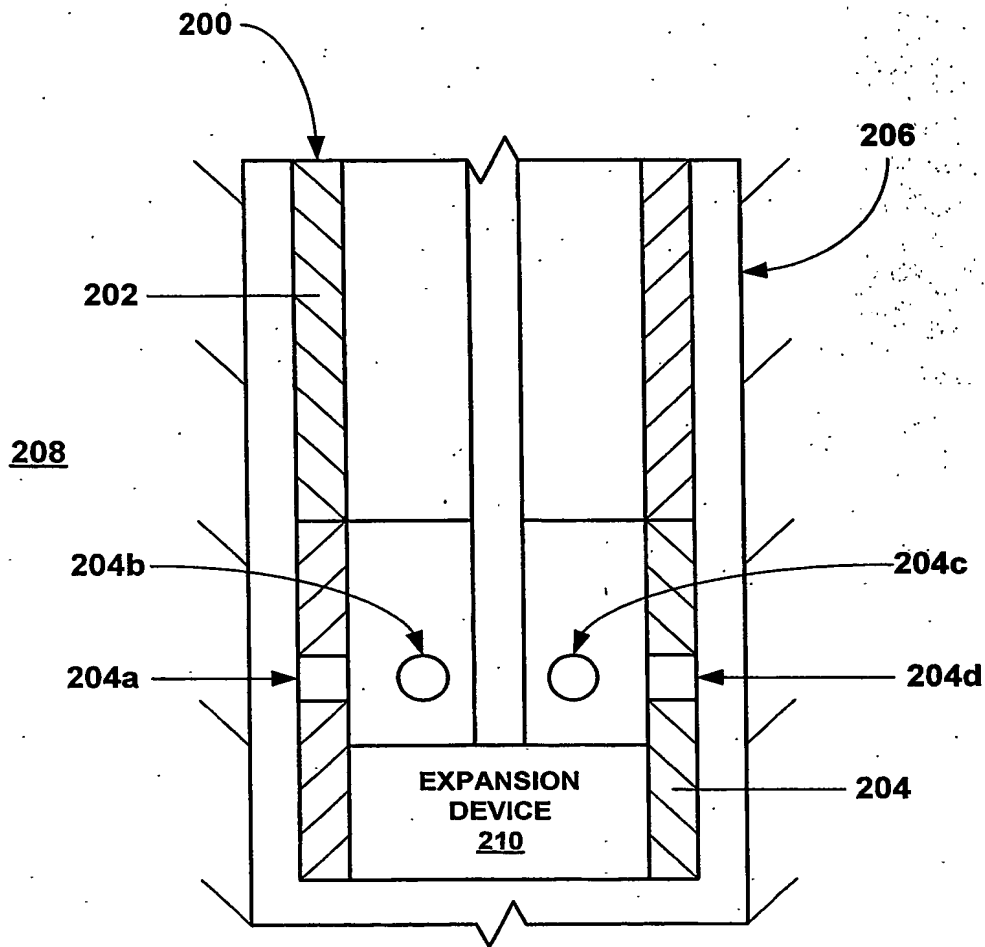


FIG. 15

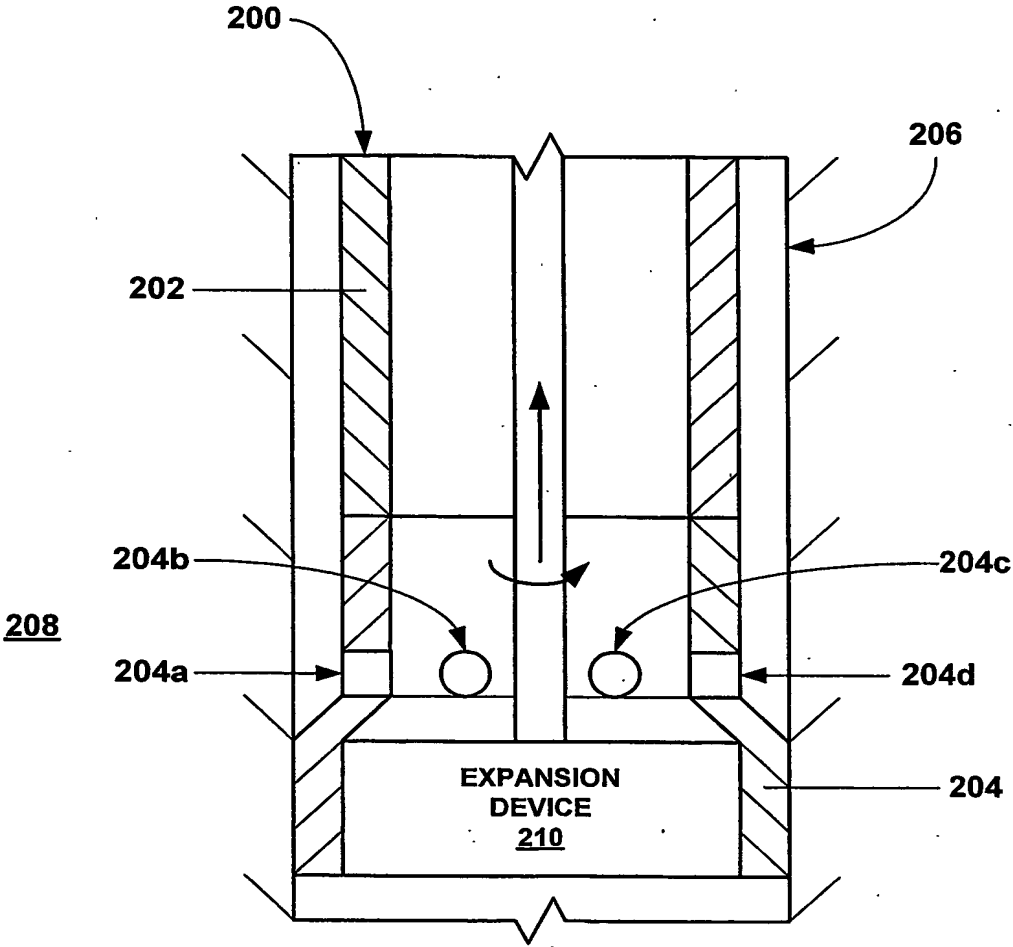


FIG. 16

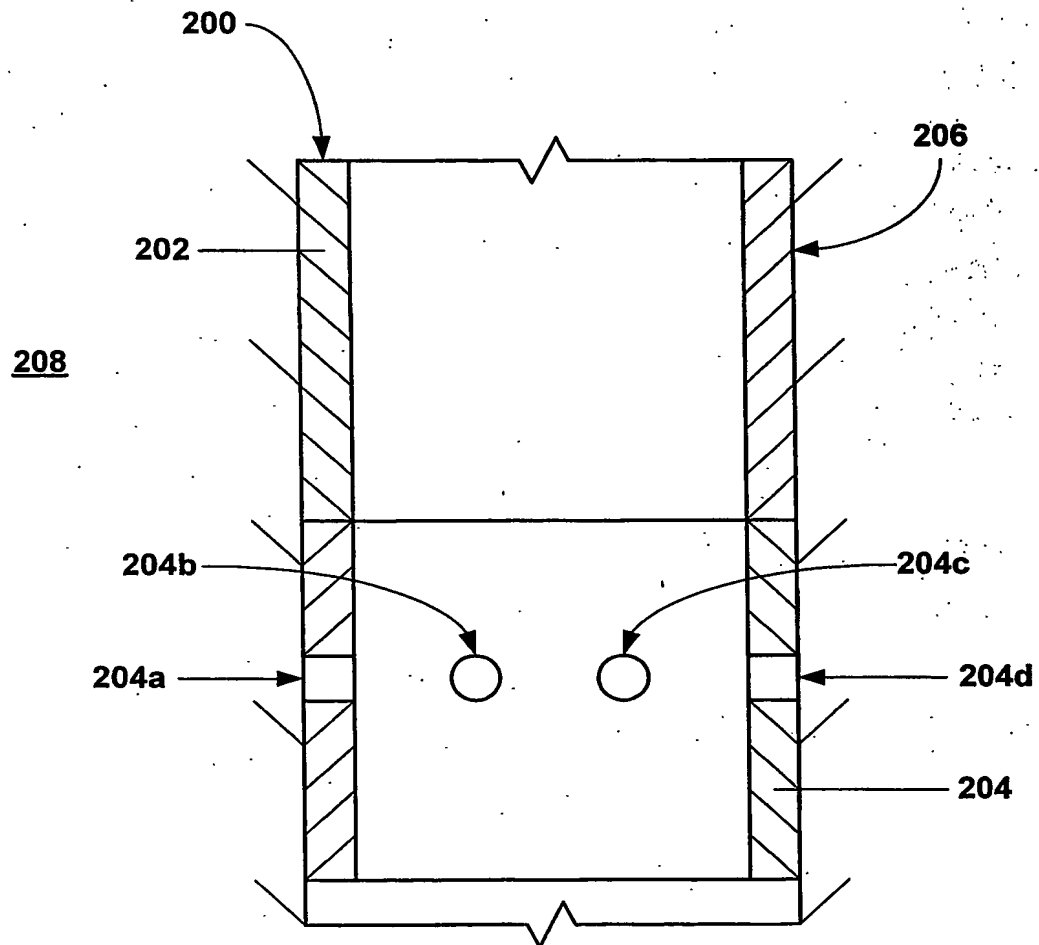


FIG. 17

300

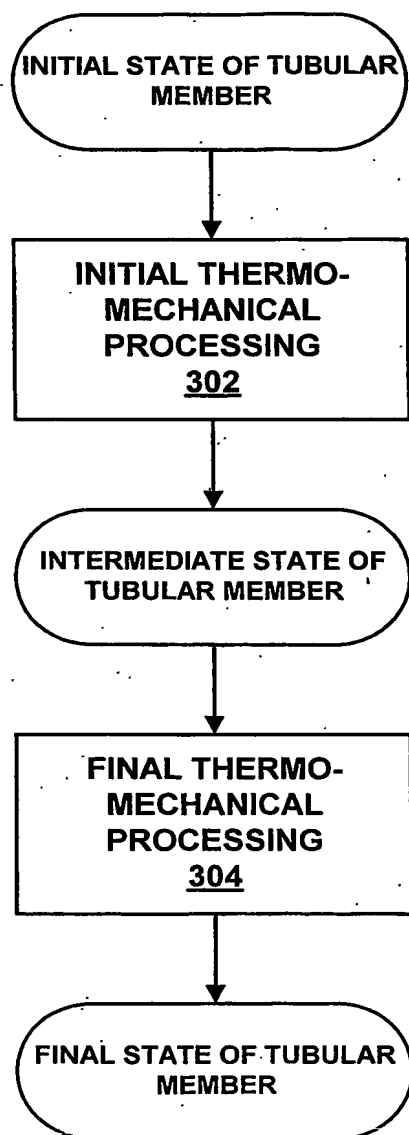


Fig. 18

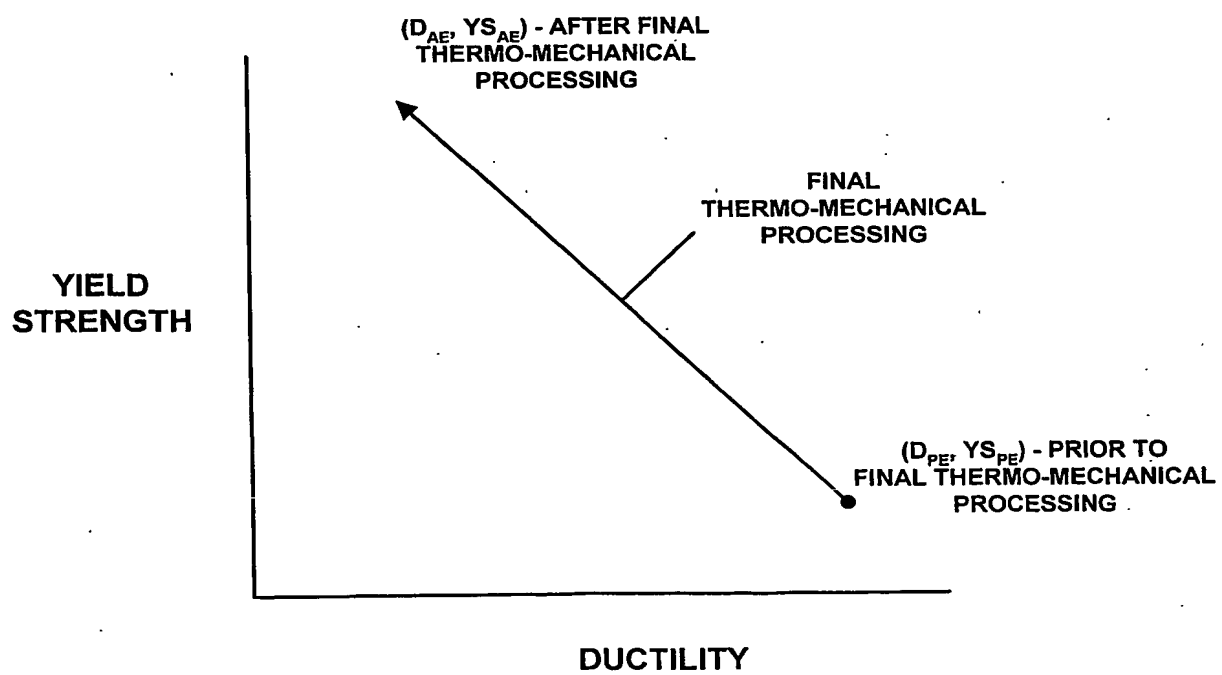


FIG. 19

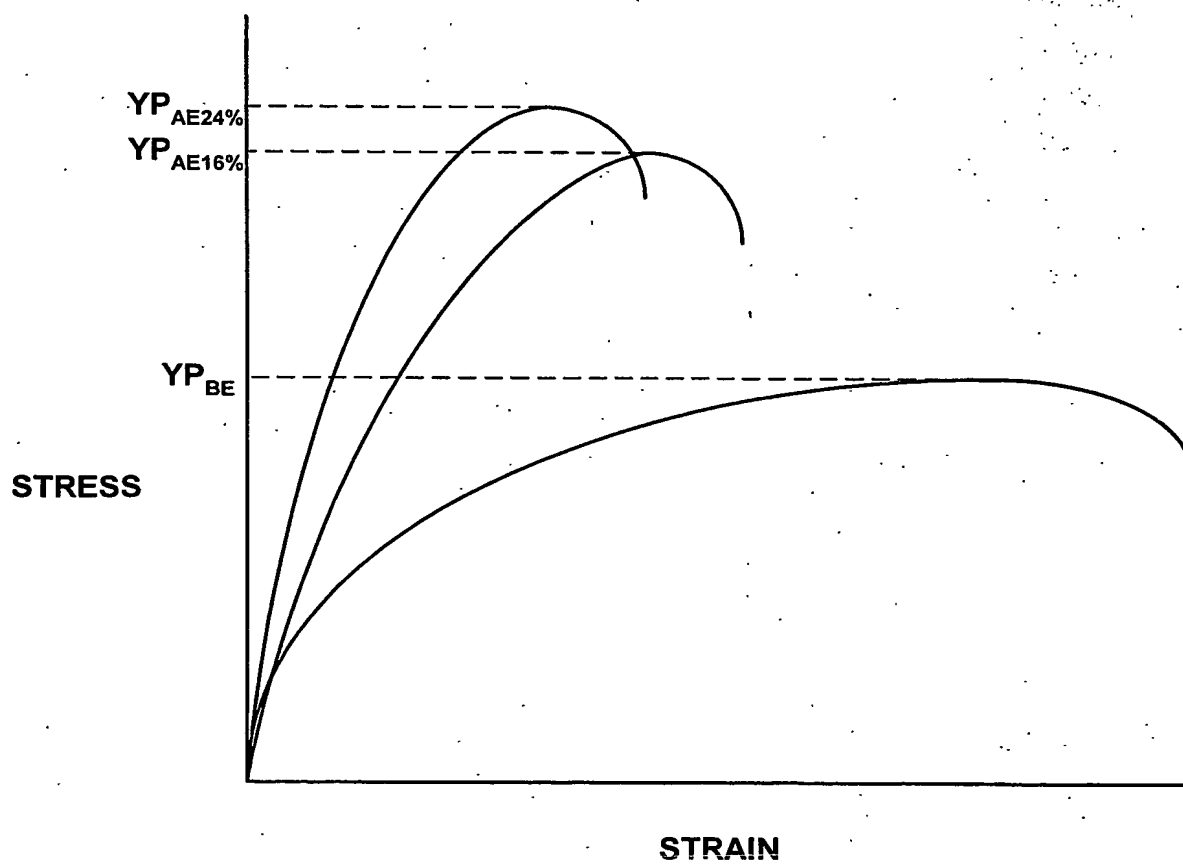


FIG. 20

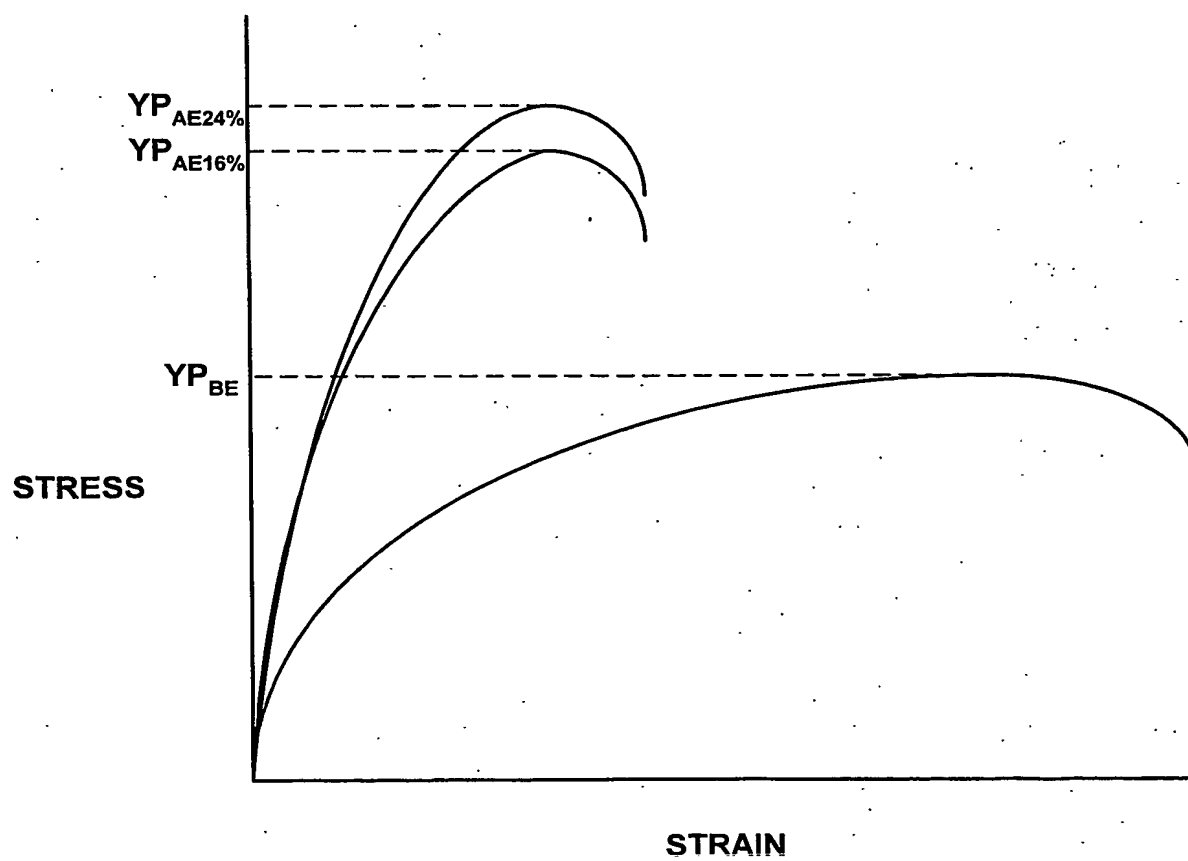


FIG. 21

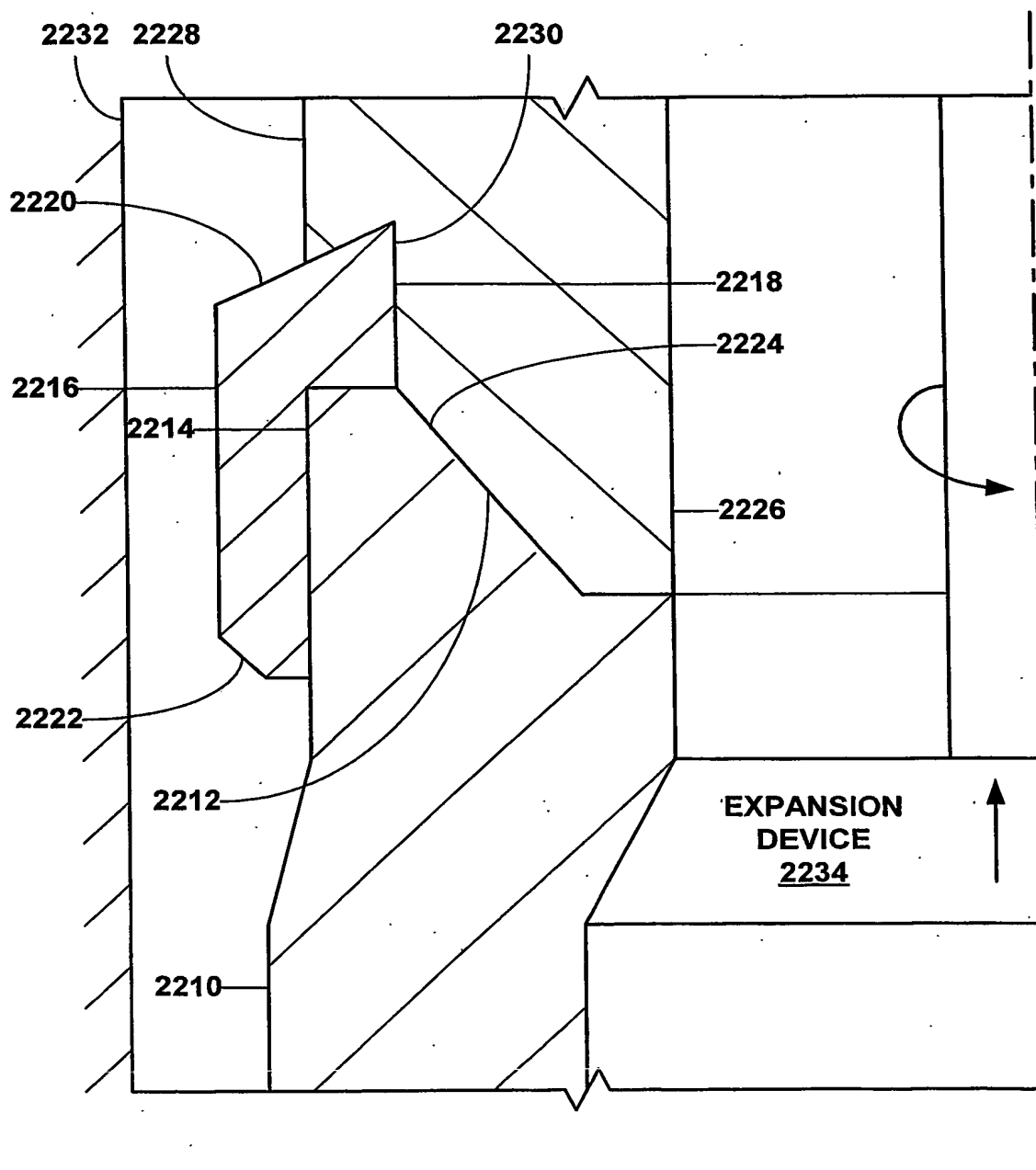


FIG. 22

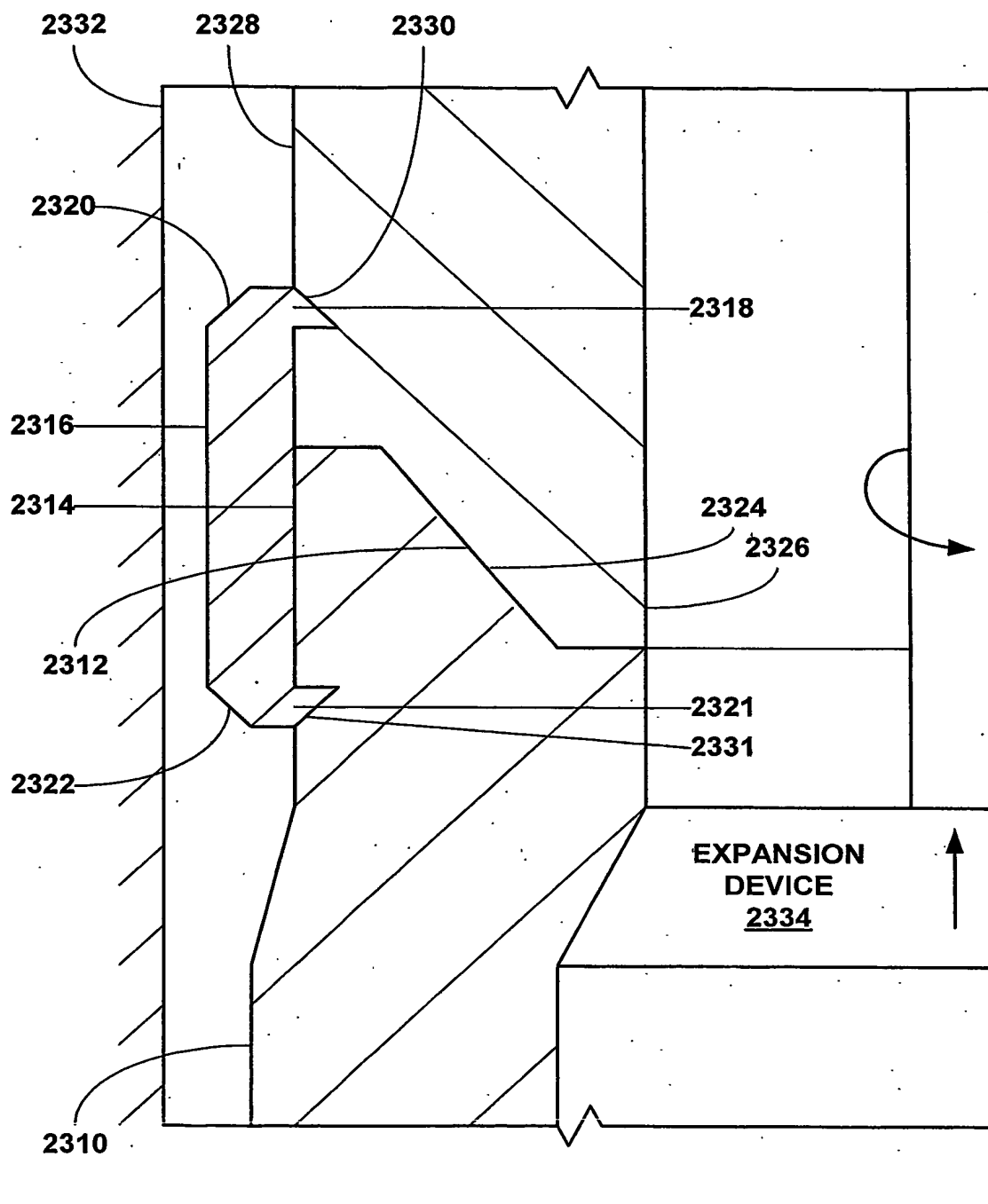


FIG. 23

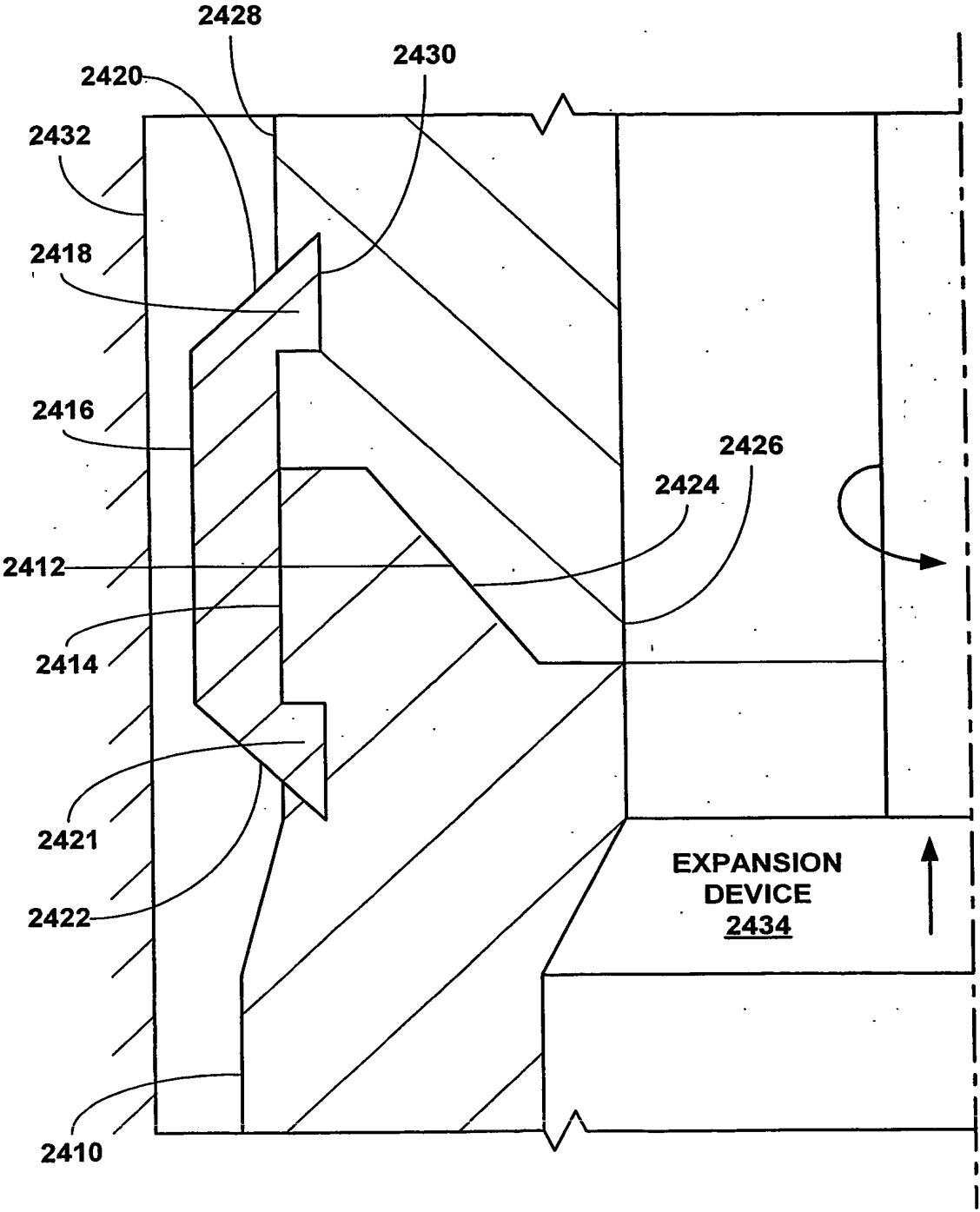


FIG. 24

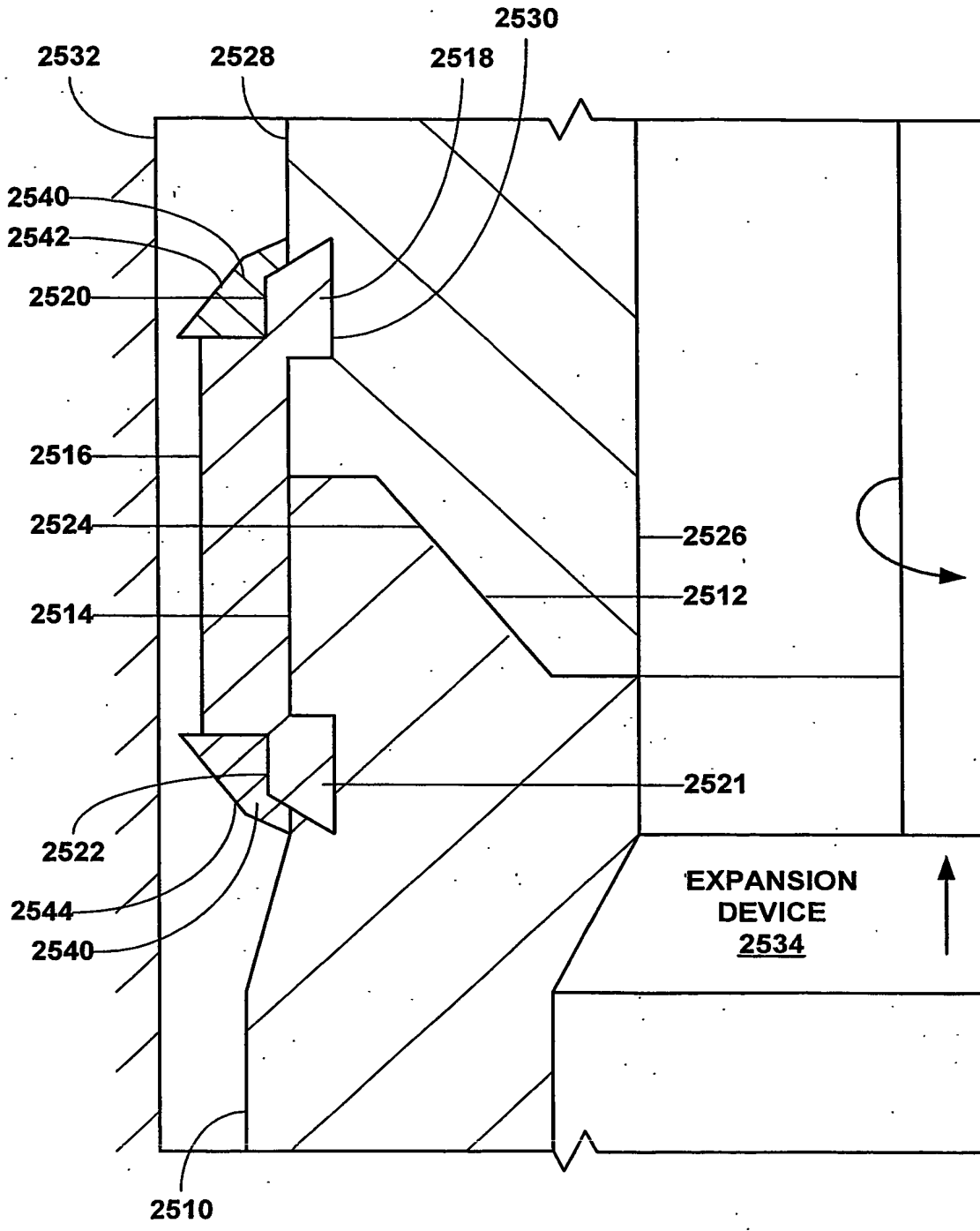


FIG. 25

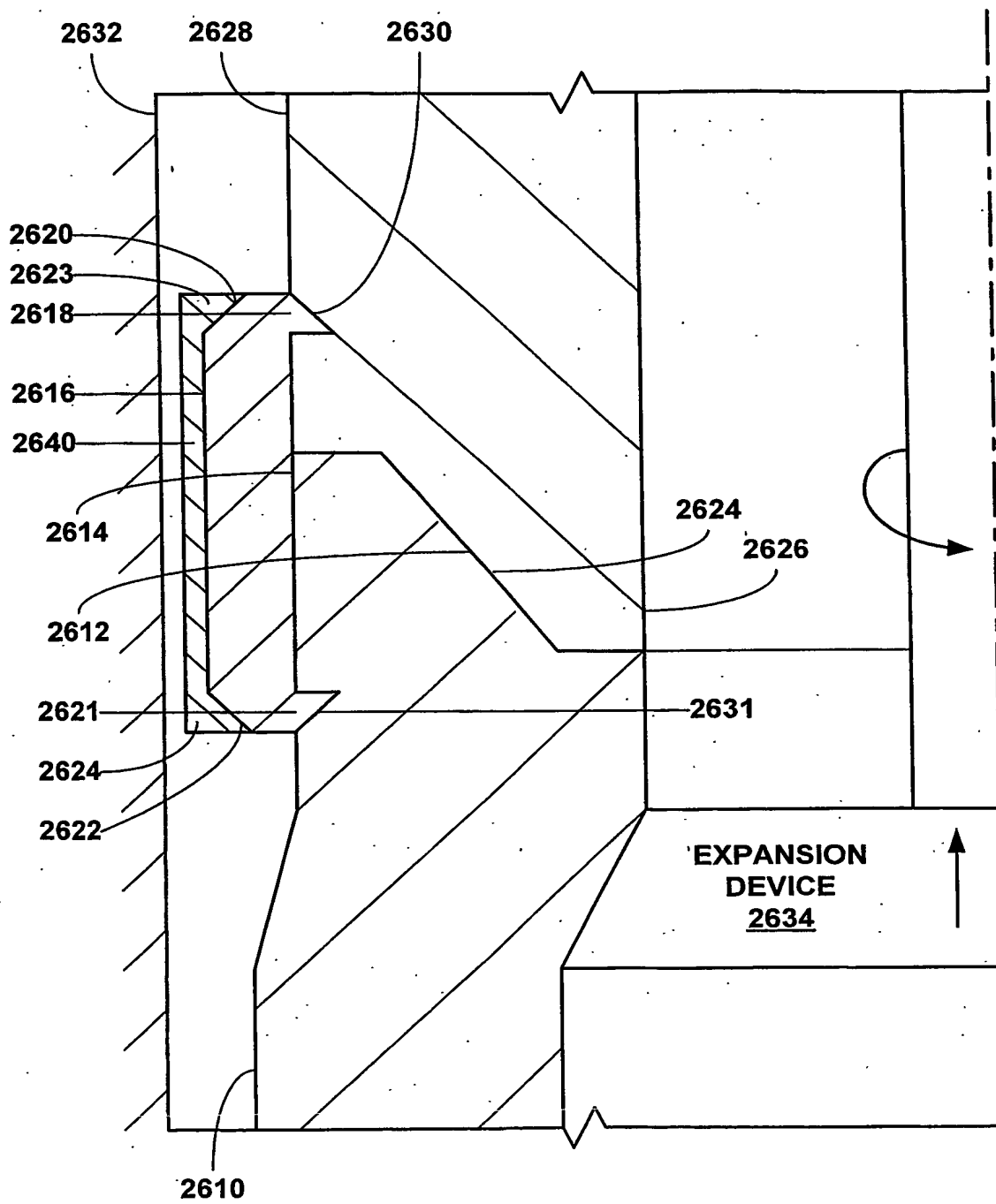


FIG. 26

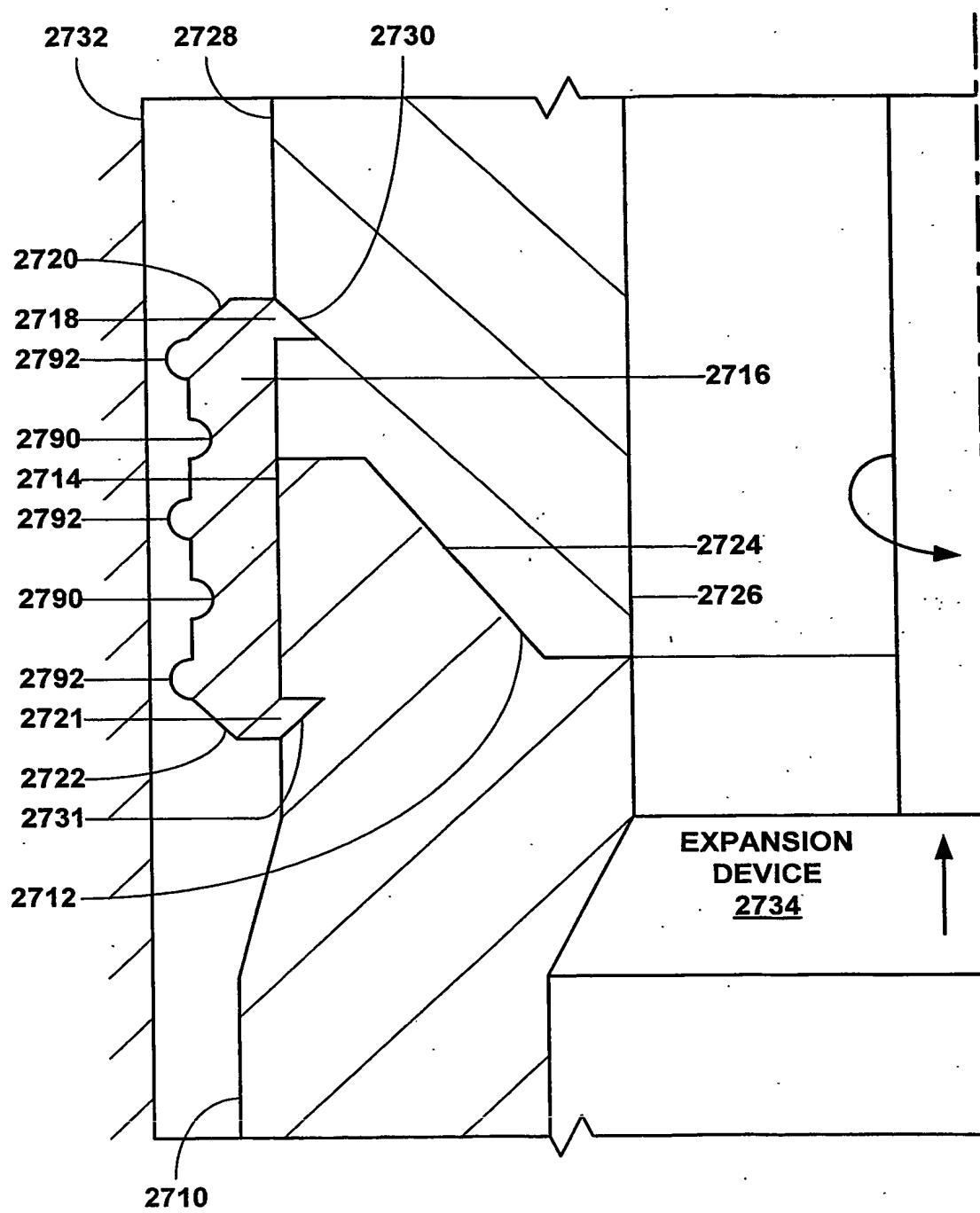


FIG. 27

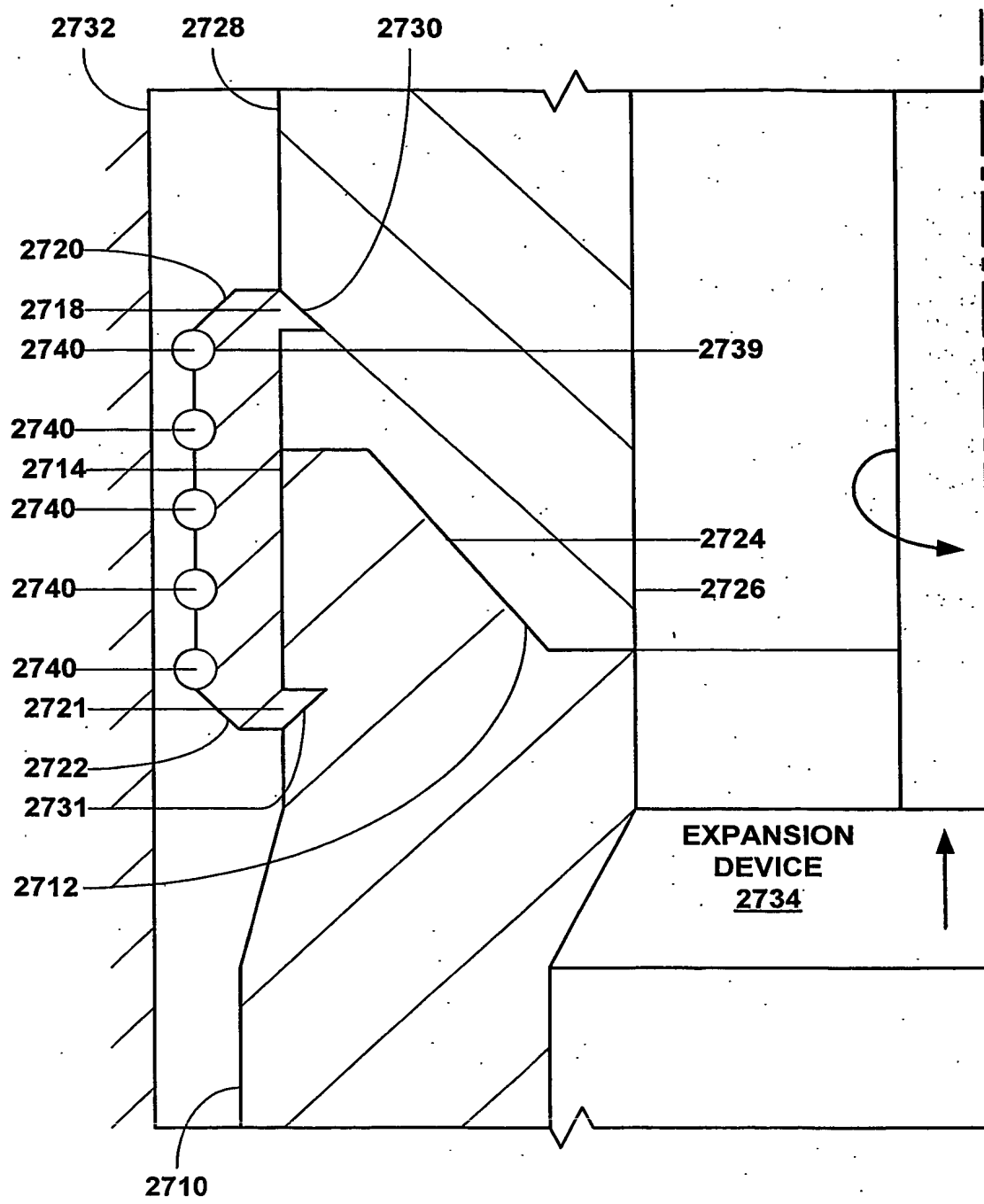


FIG. 28

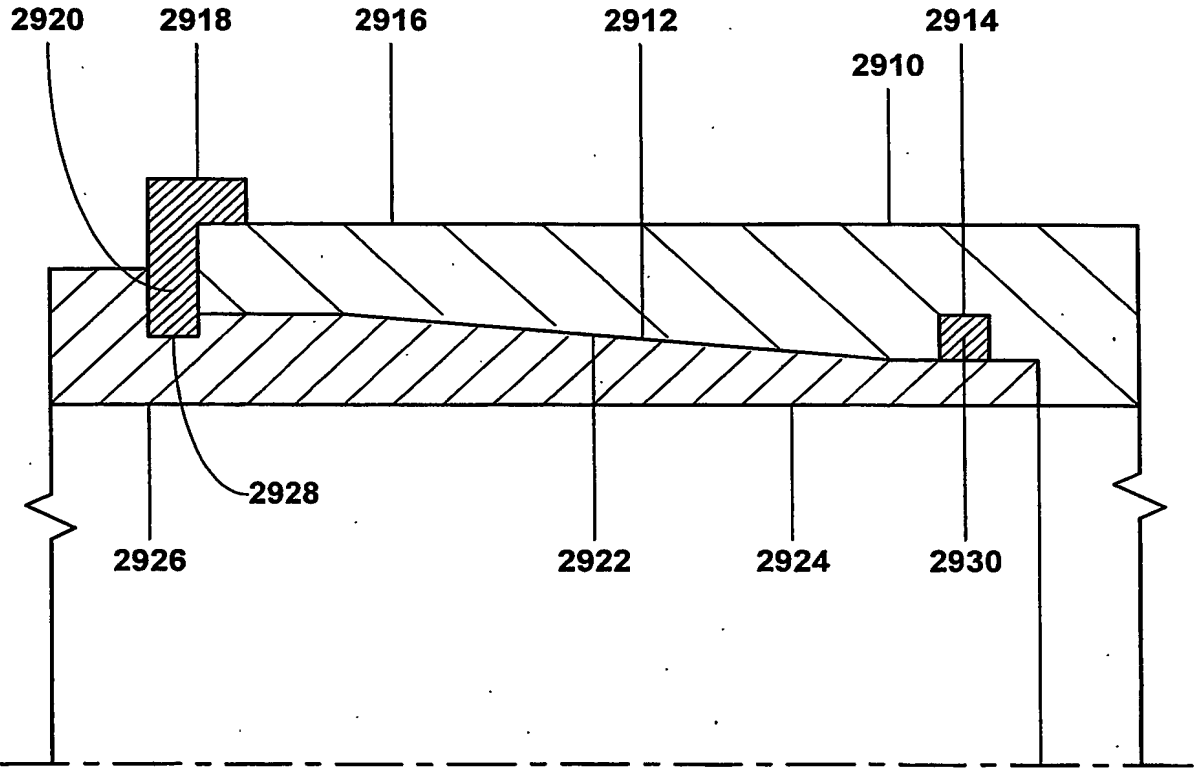


FIG. 29

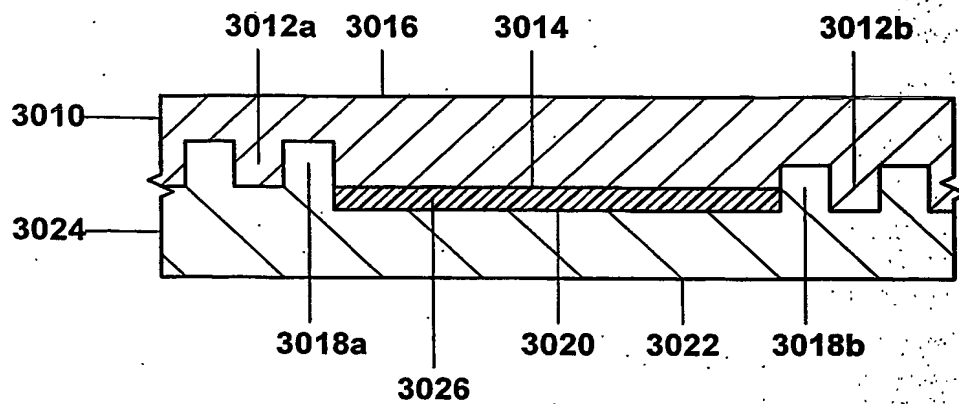


FIG. 30a

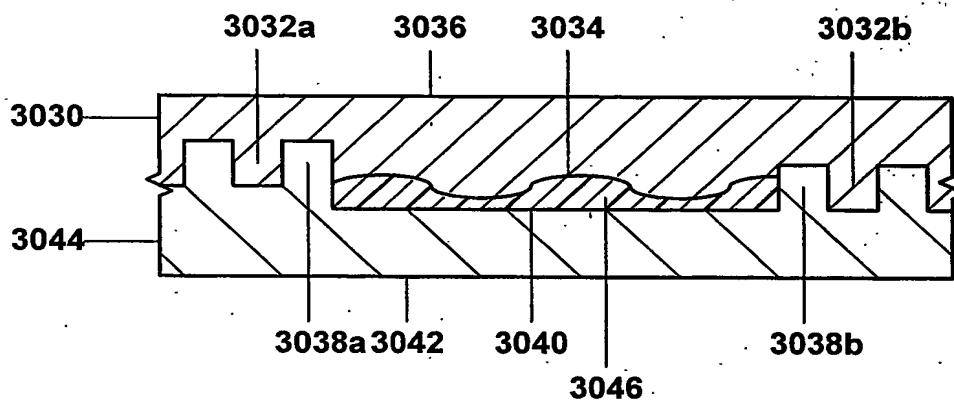


FIG. 30b

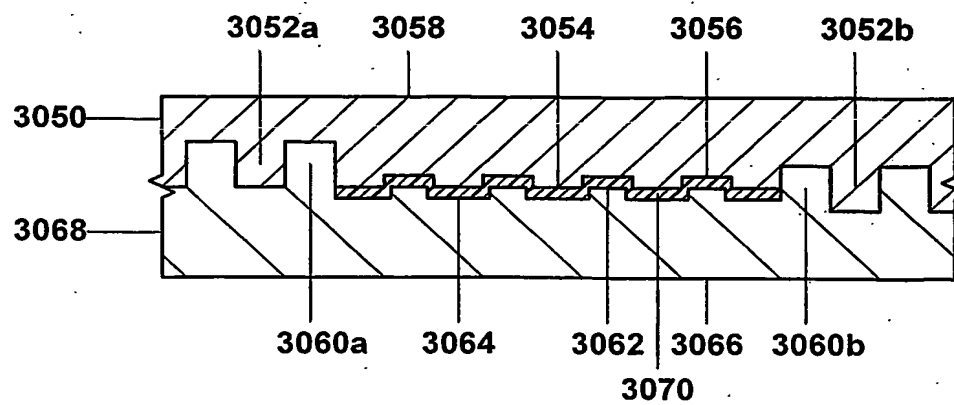


FIG. 30c

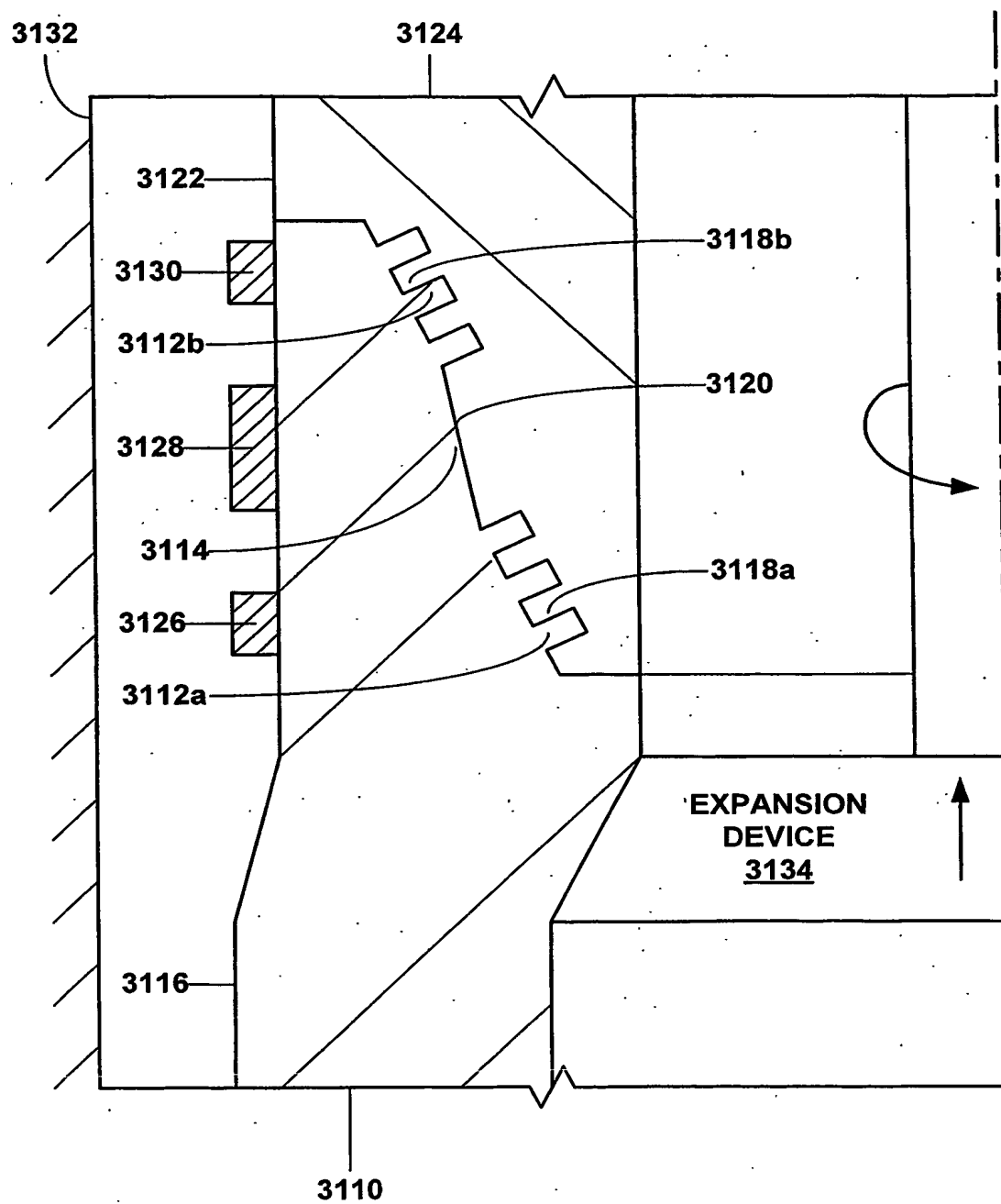


FIG. 31

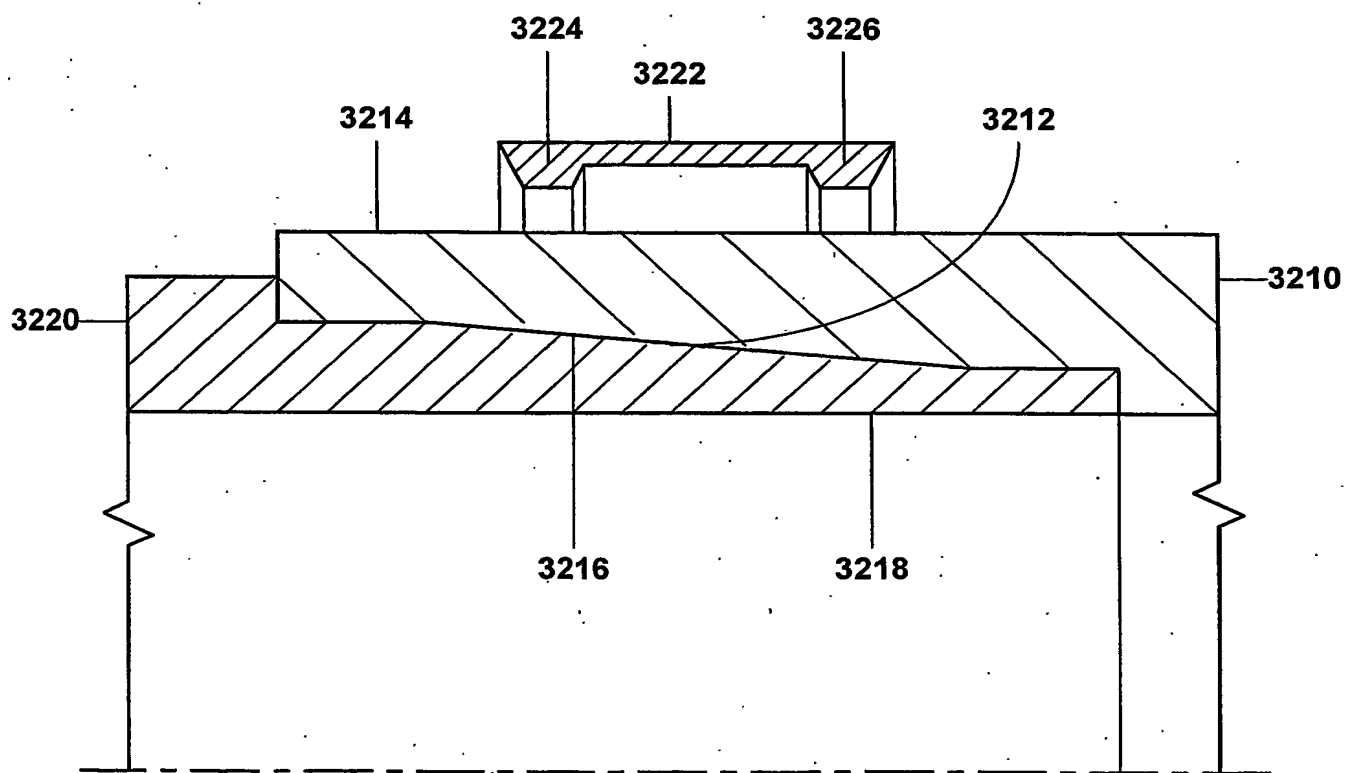


FIG. 32a

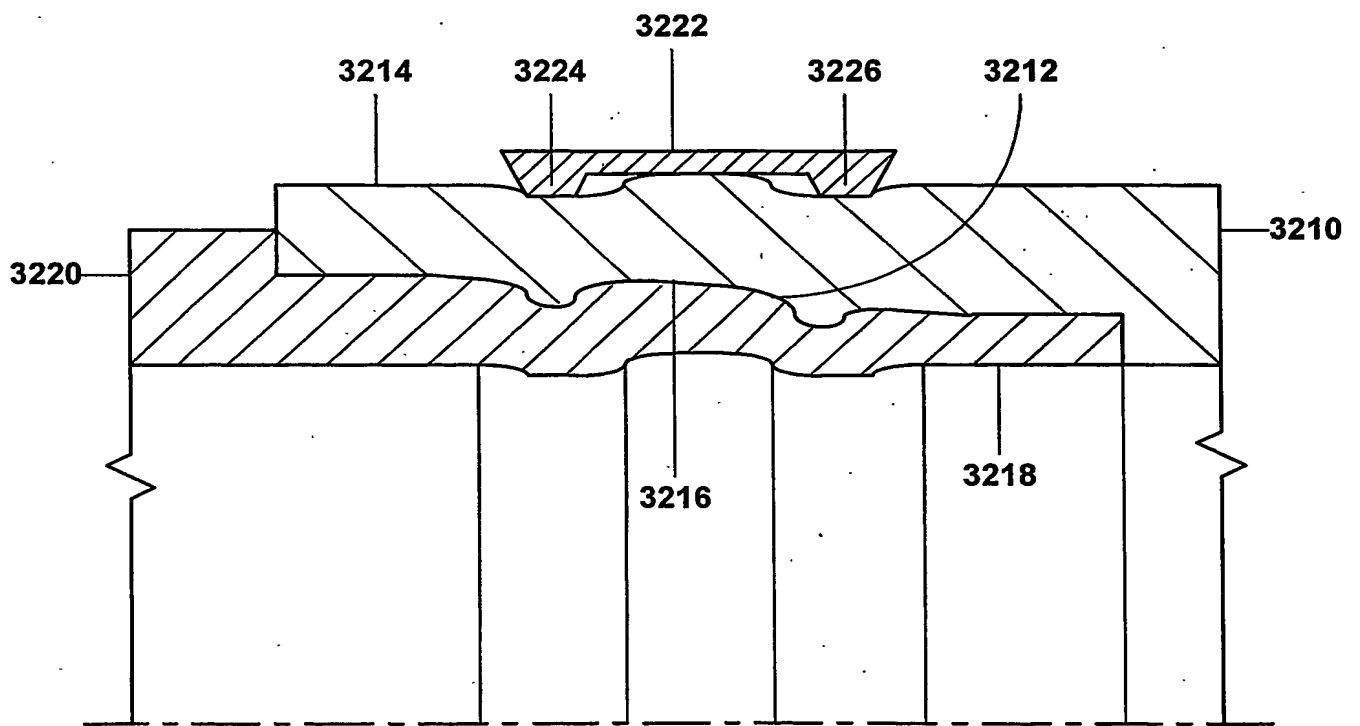


FIG. 32b

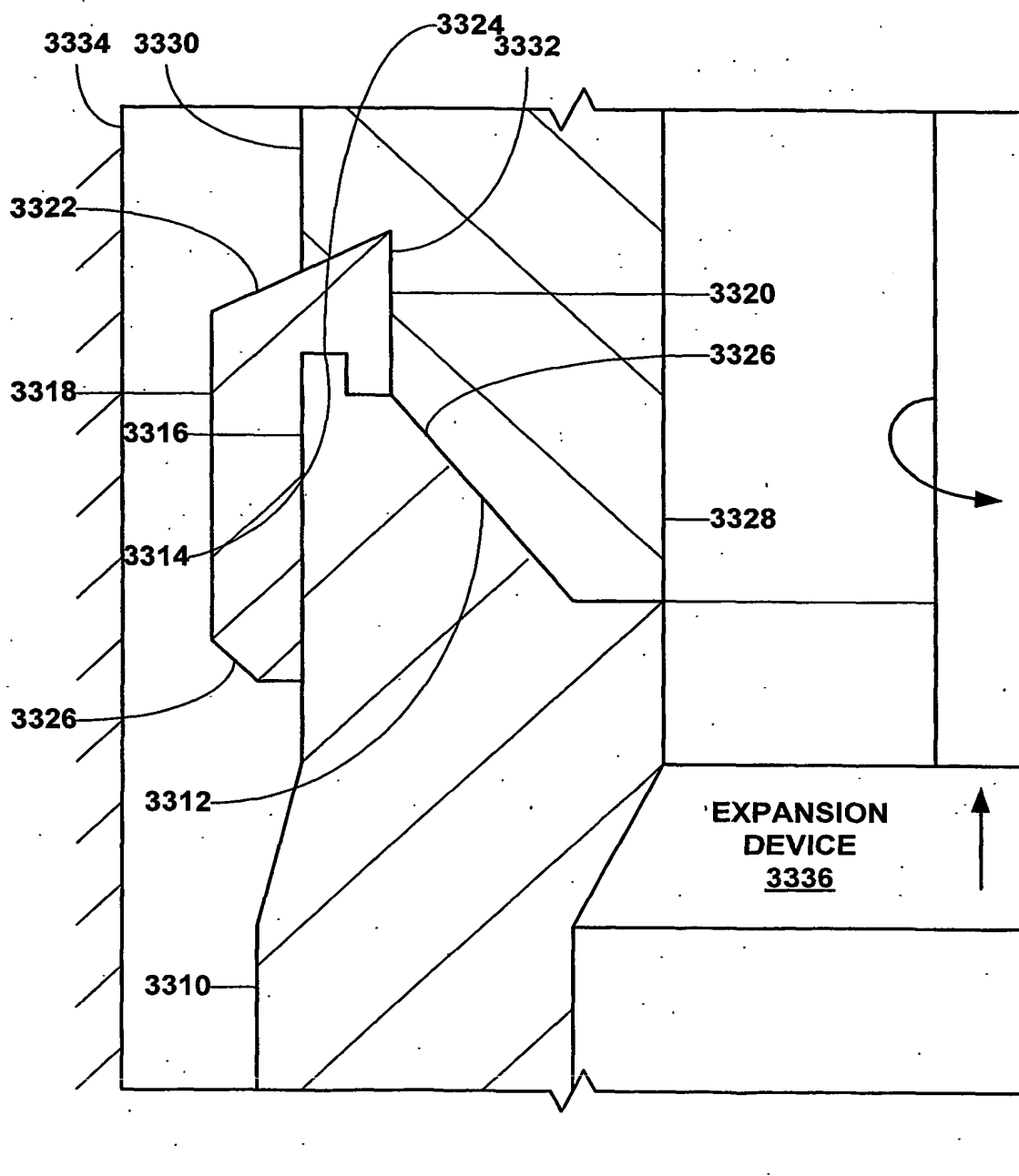


FIG. 33

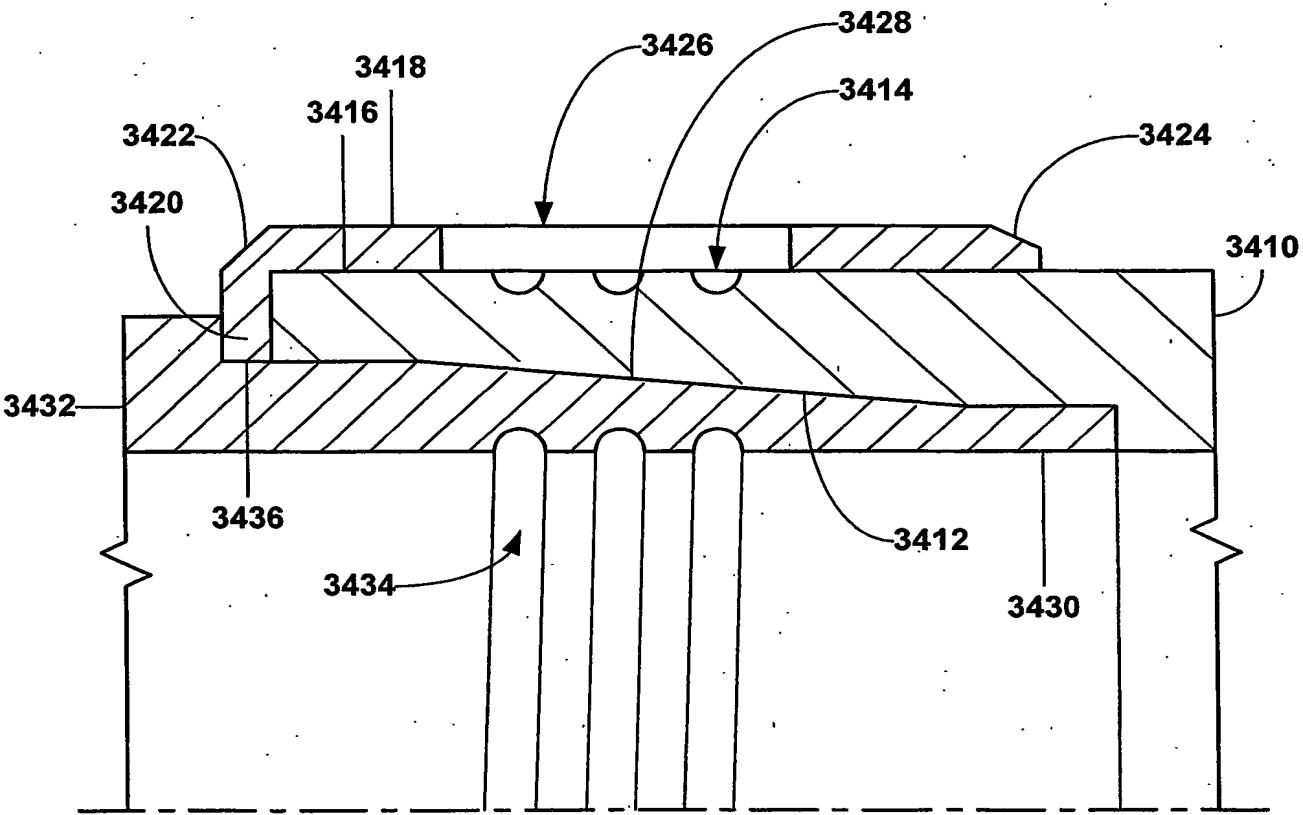


FIG. 34a

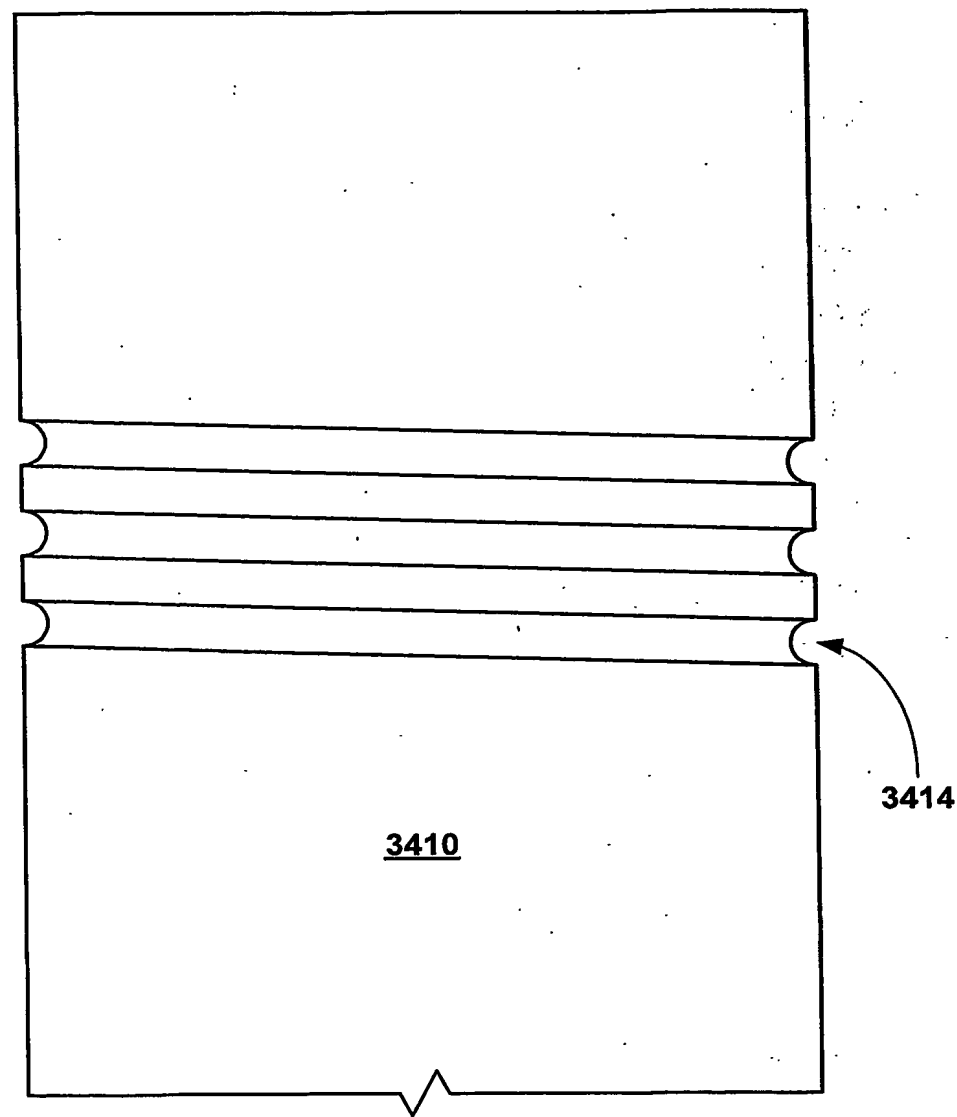


Fig. 34b

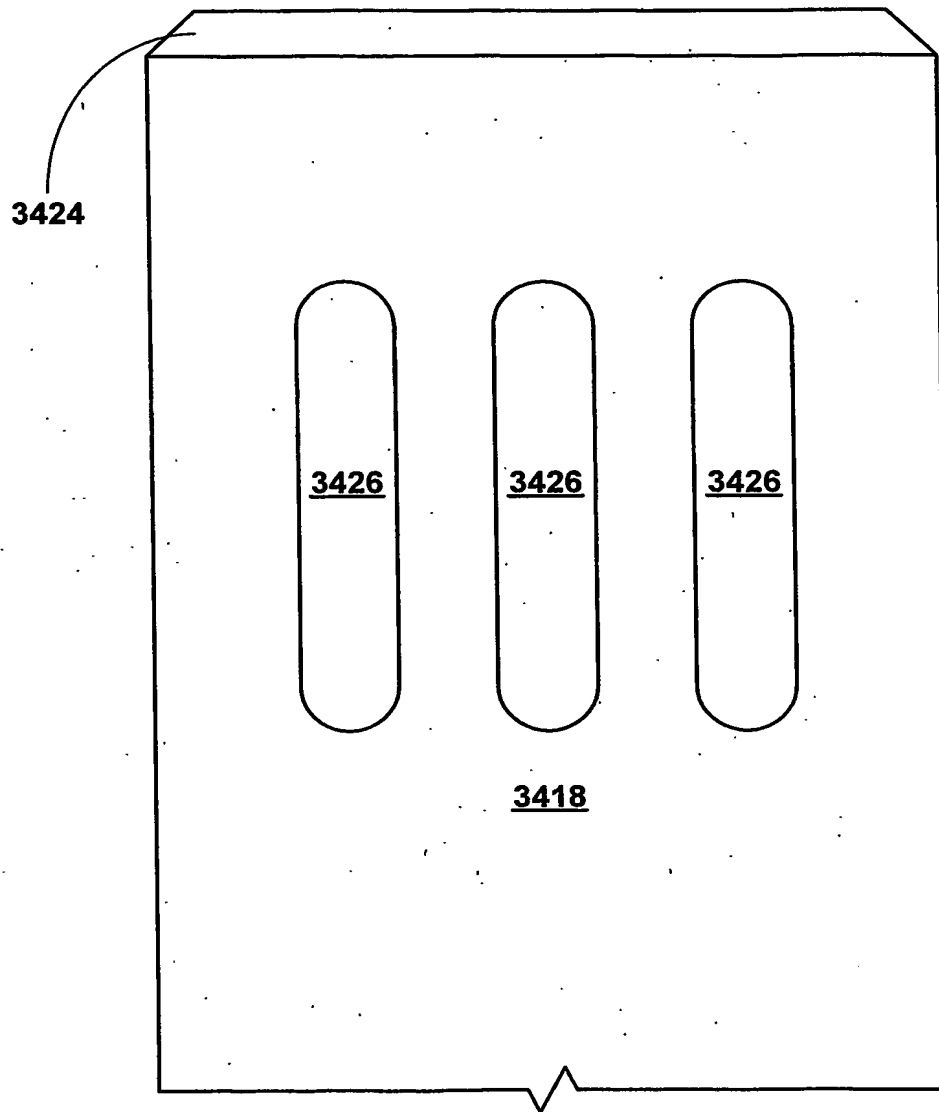


Fig. 34c

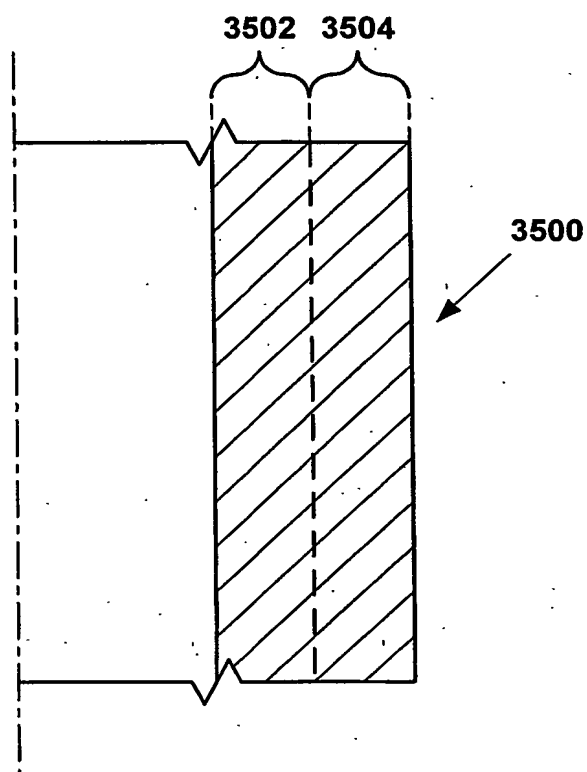


FIG. 35a

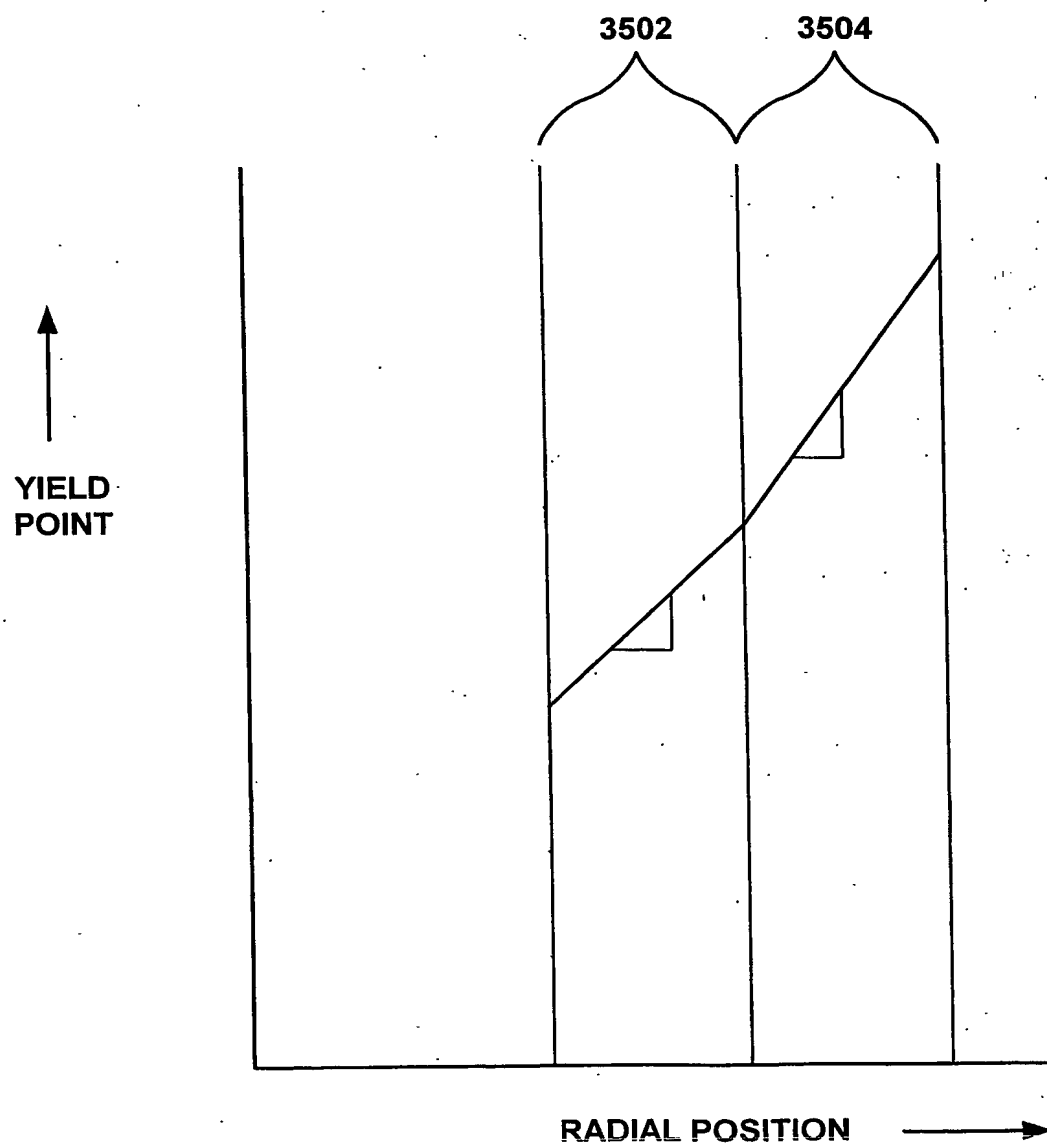


FIG. 35b

3600

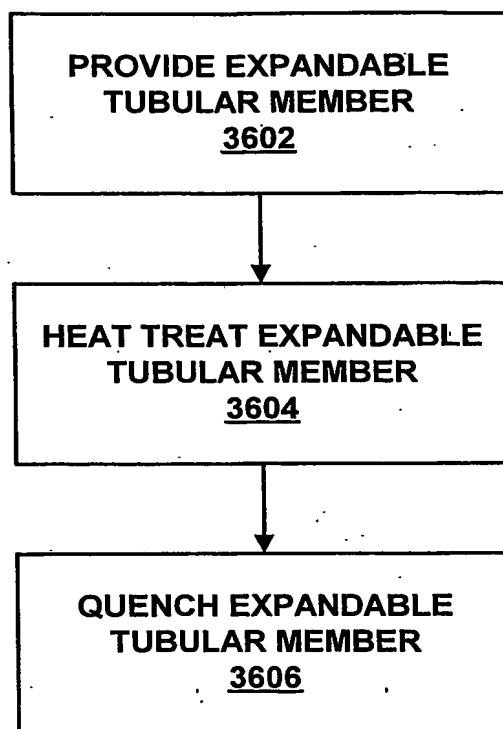
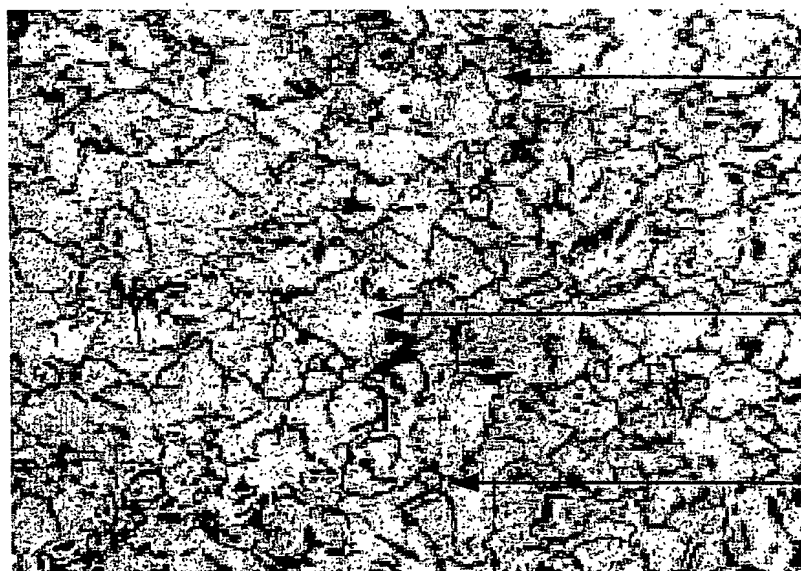


FIG. 36a

3602a



MARTENSITE

PEARLITE

V, Ni, Ti
CARBIDES

Fig. 36b

3602a

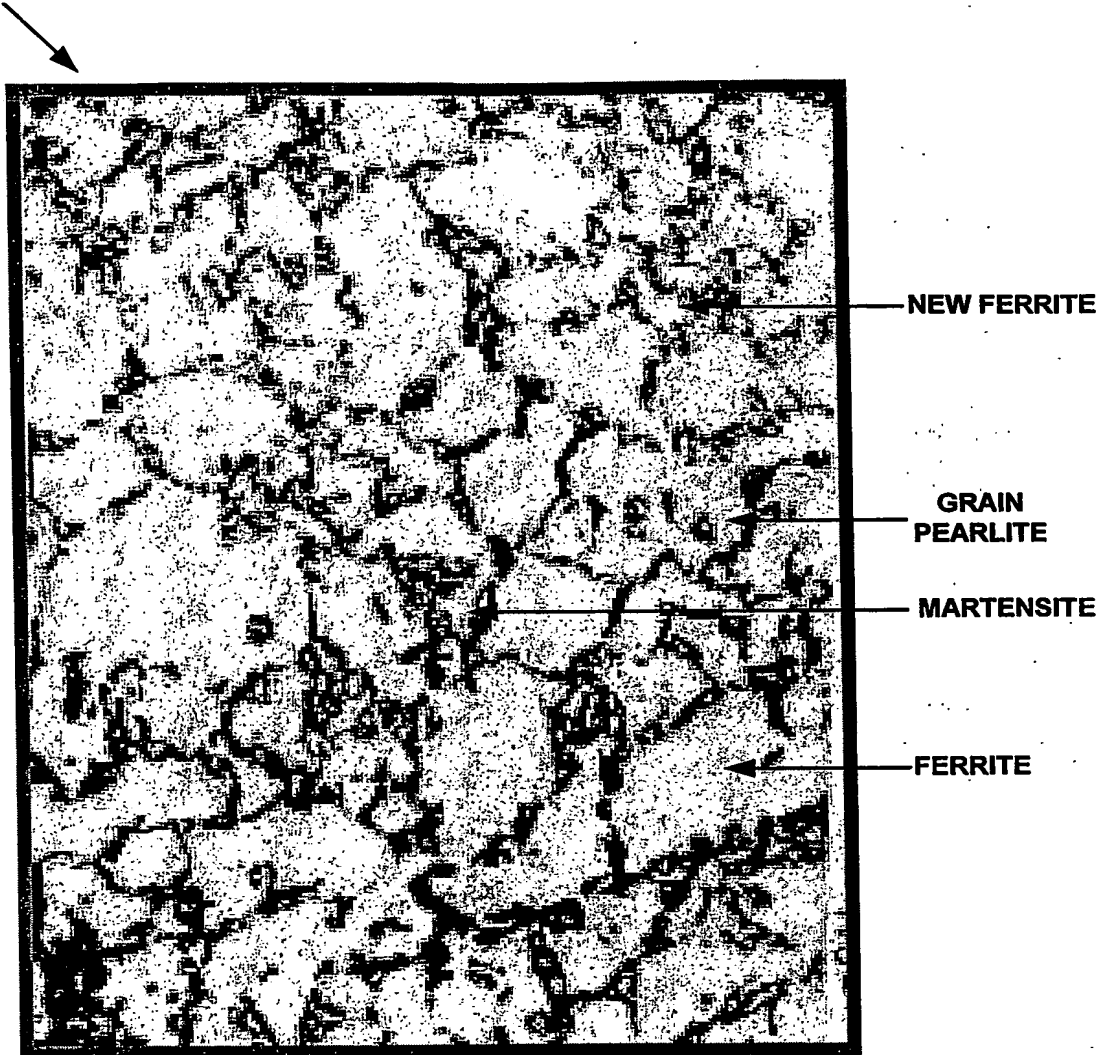


Fig. 36c

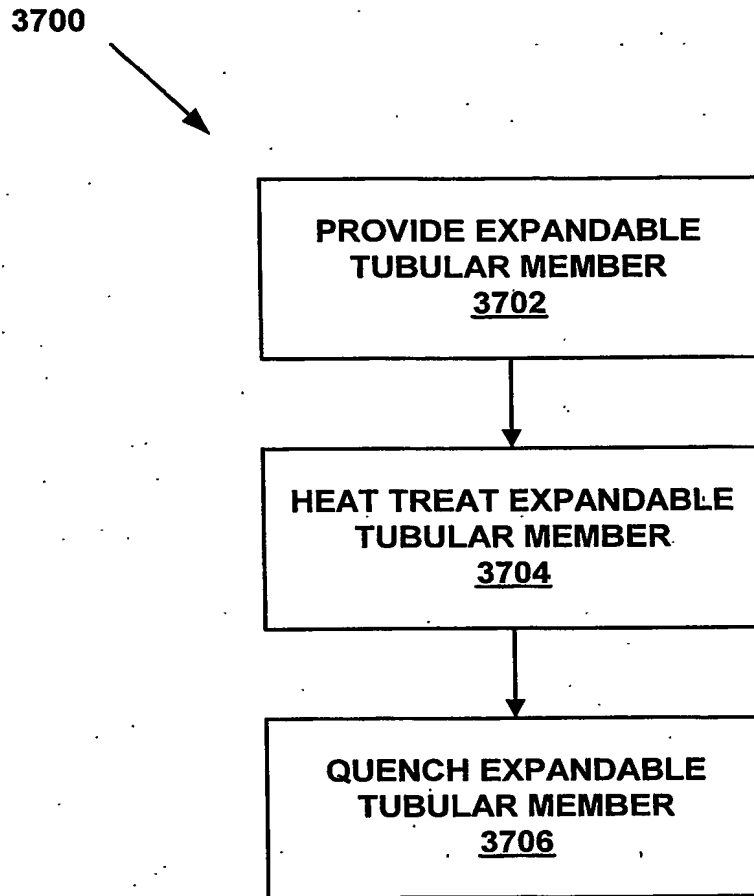
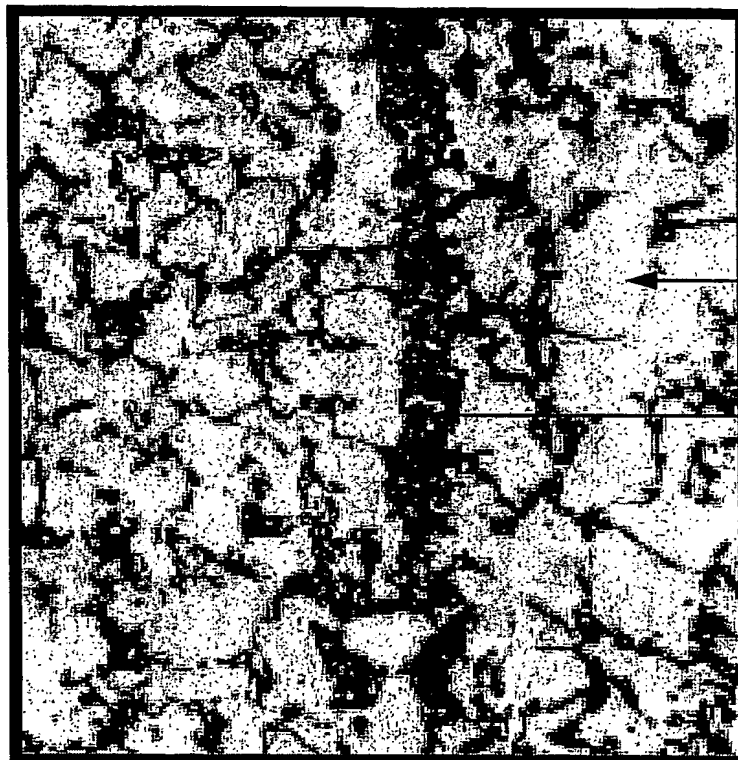


FIG. 37a

3702a

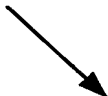


PEARLITE

PEARLITE
STRIATION

Fig. 37b

3702a



FERRITE

MARTENSITE

BAINITE

Fig. 37c

3800

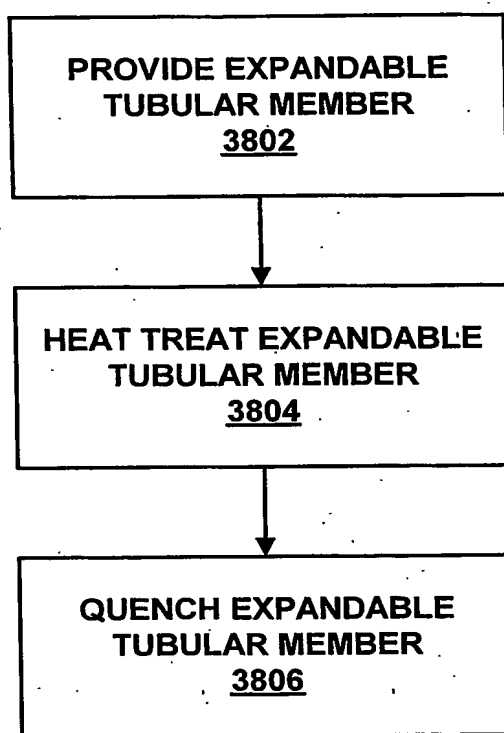


FIG. 38a

3802a



GRAIN PEARLITE

WIDMANSTATTEN
MARTENSITE

V, Ni, and Ti CARBIDES

Fig. 38b

3802a

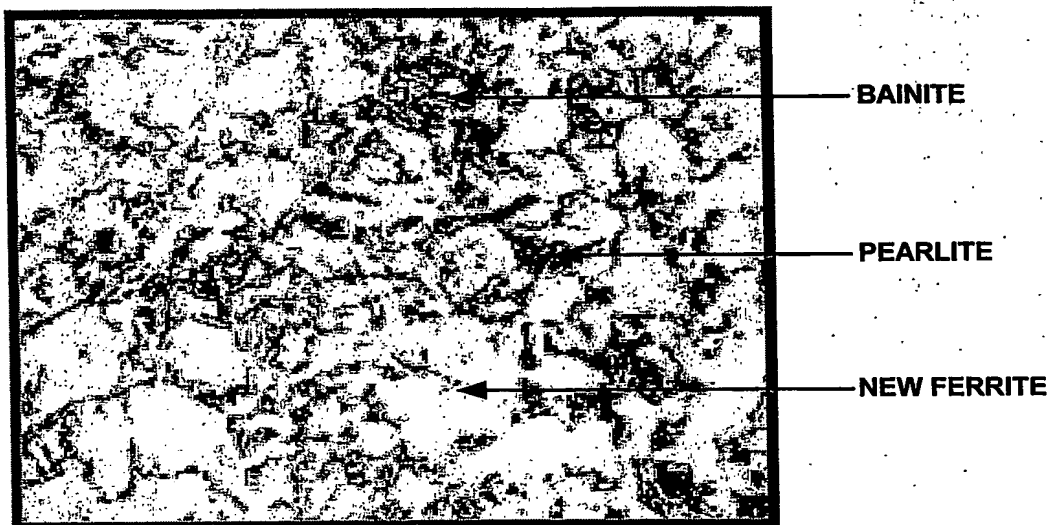


Fig. 38c

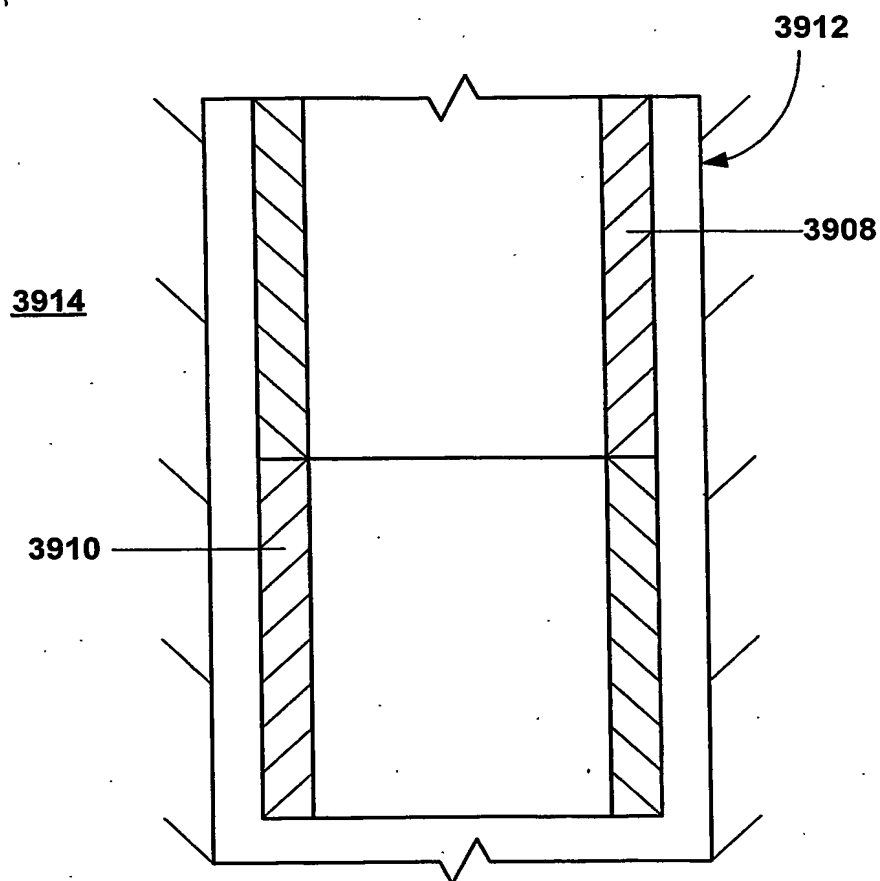


FIG. 39a

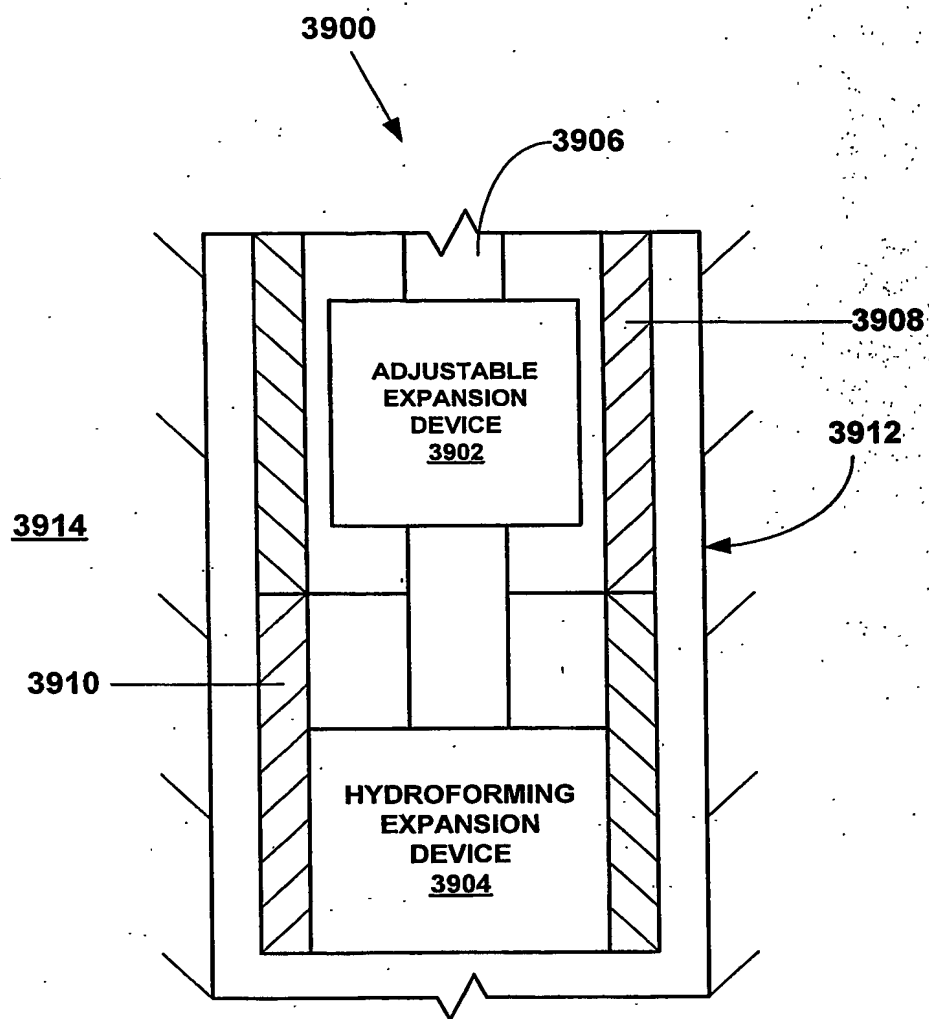


FIG. 39b

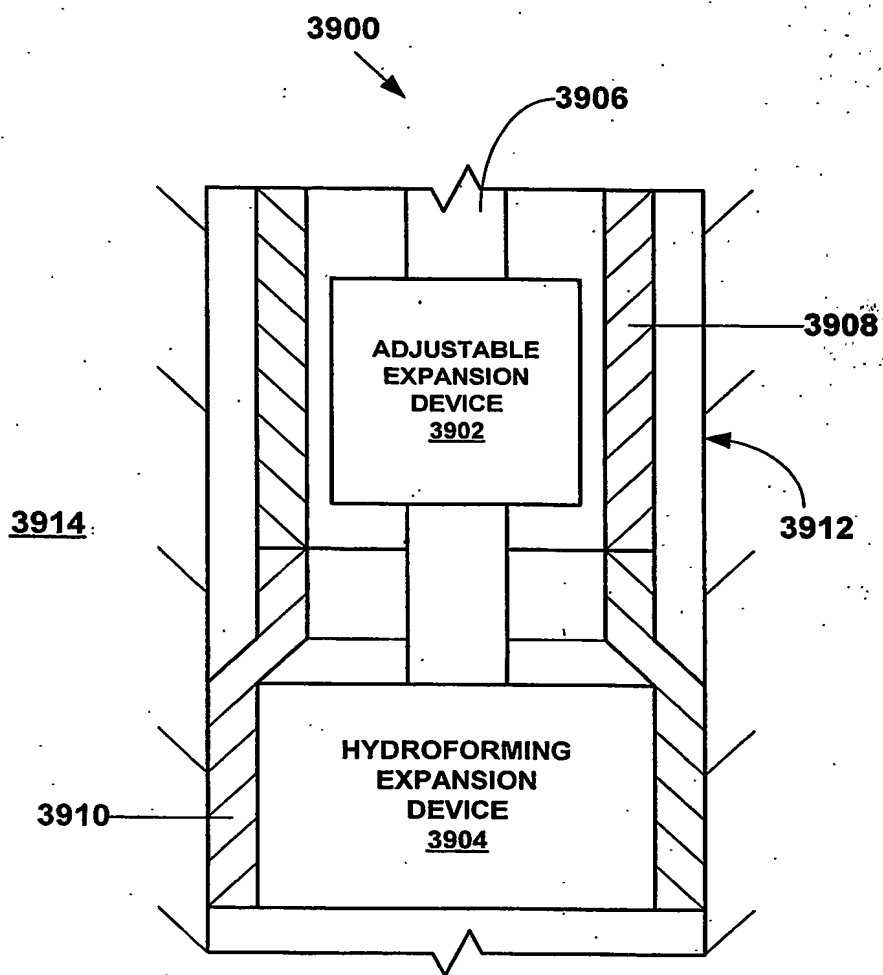


FIG. 39c

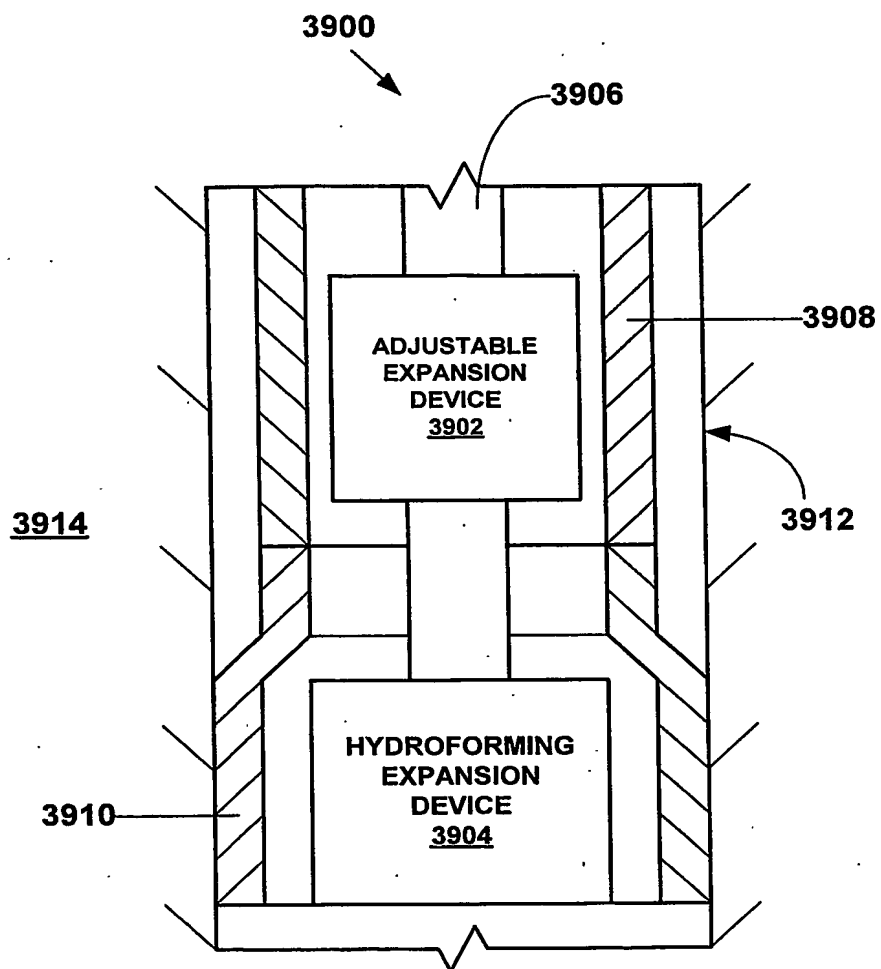


FIG. 39d

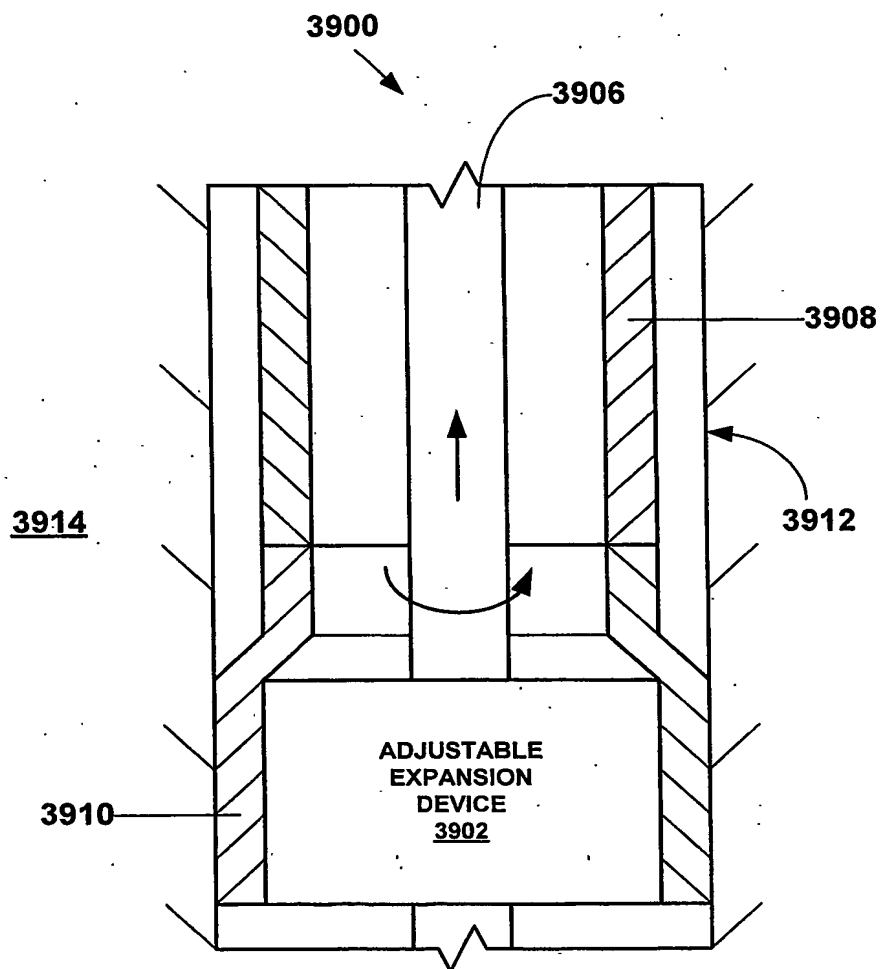


FIG. 39e

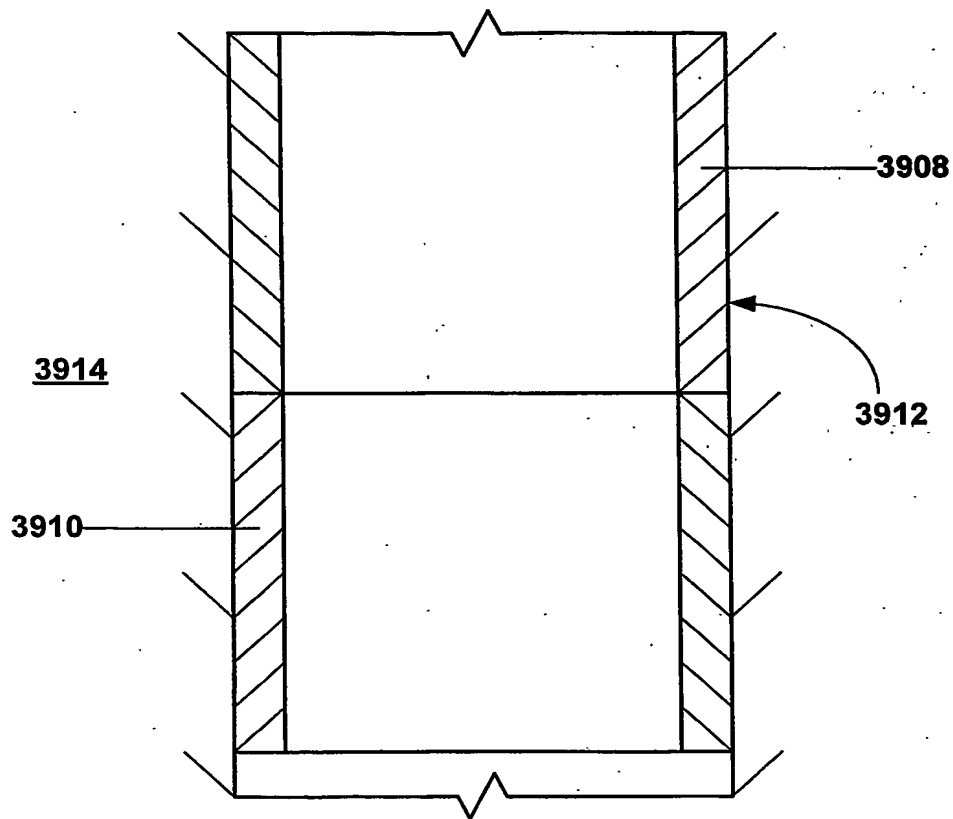


FIG. 39f

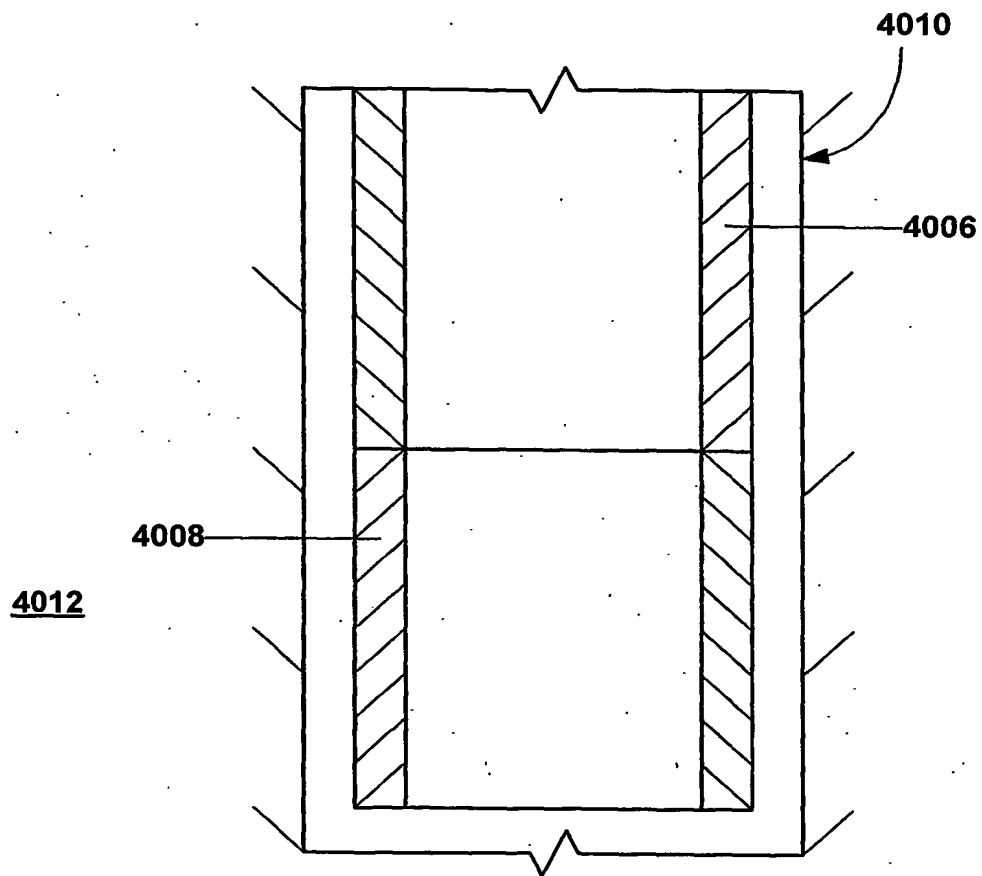


FIG. 40a

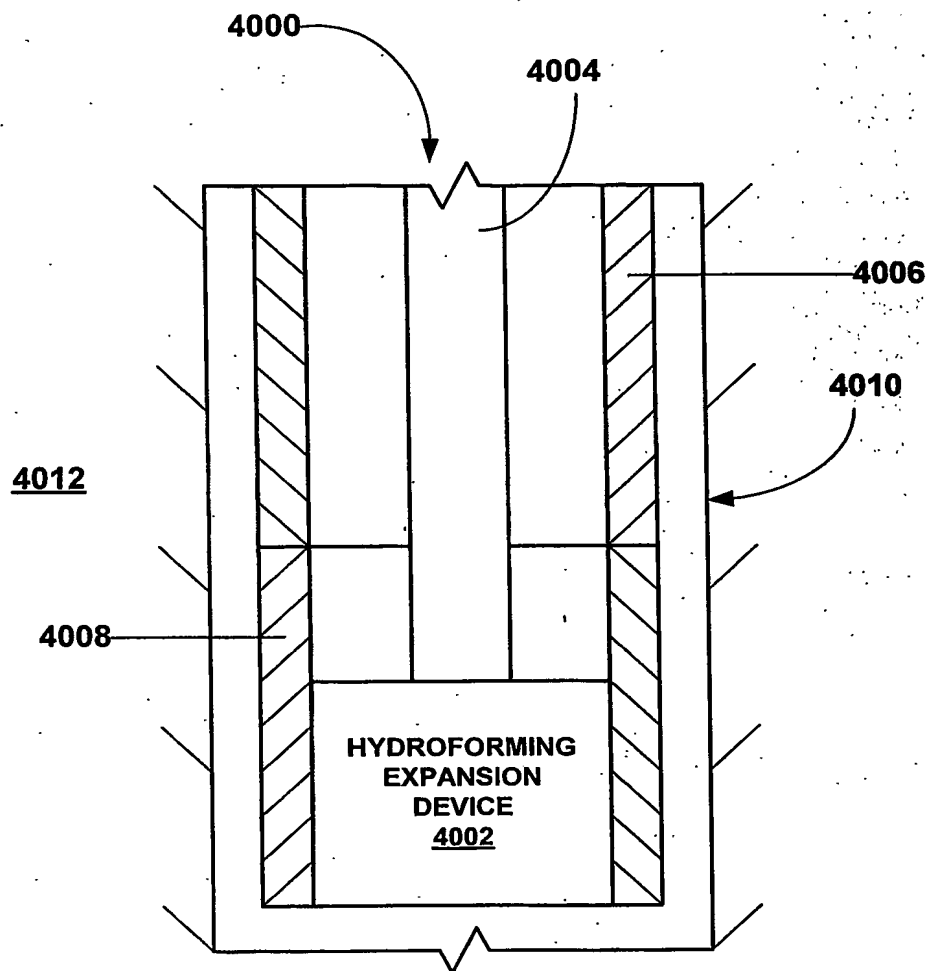


FIG. 40b

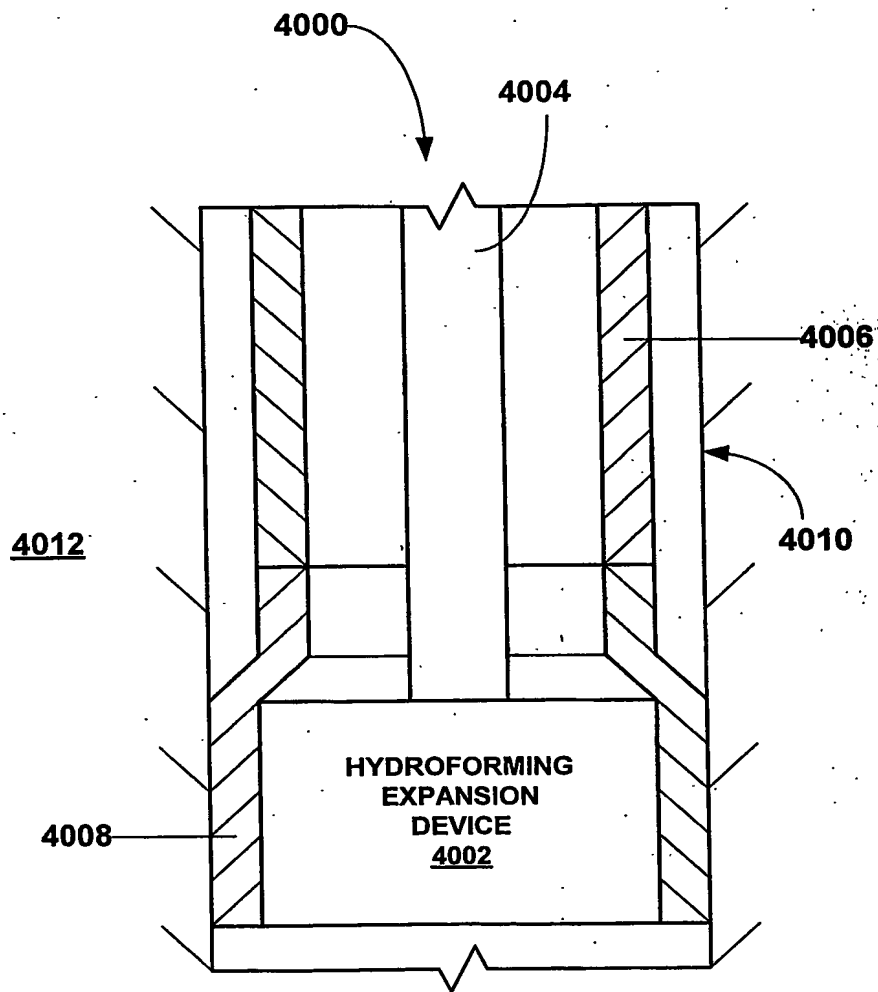


FIG. 40c

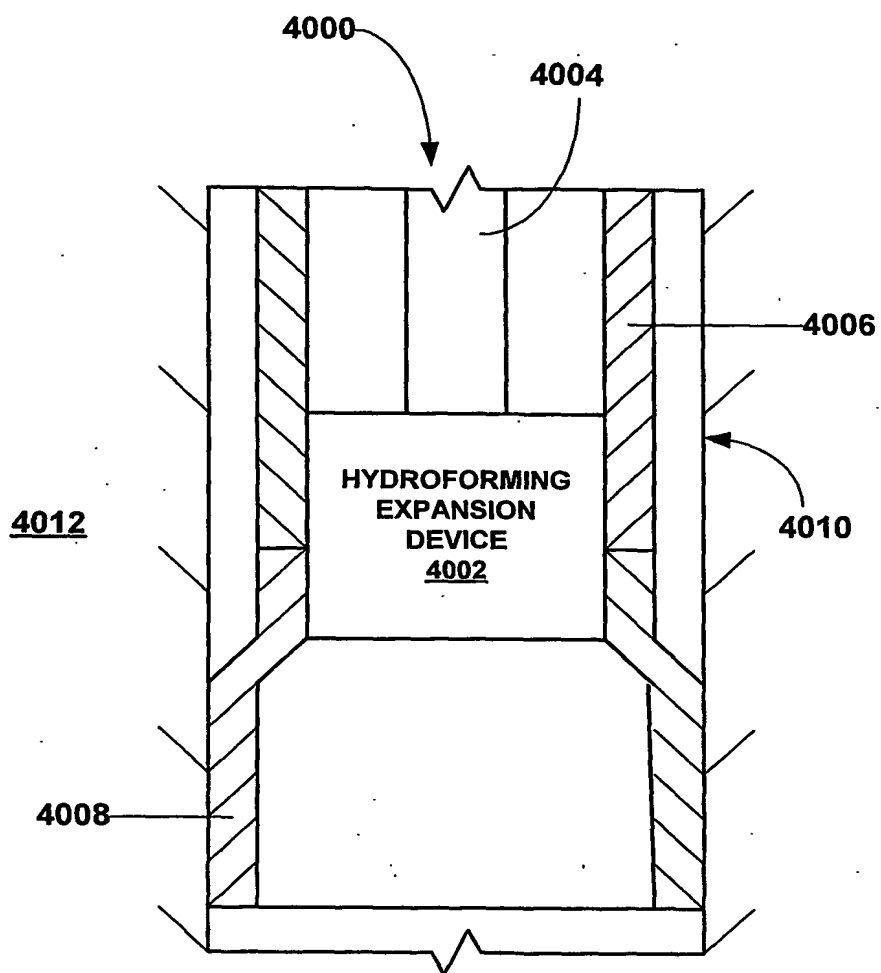


FIG. 40d

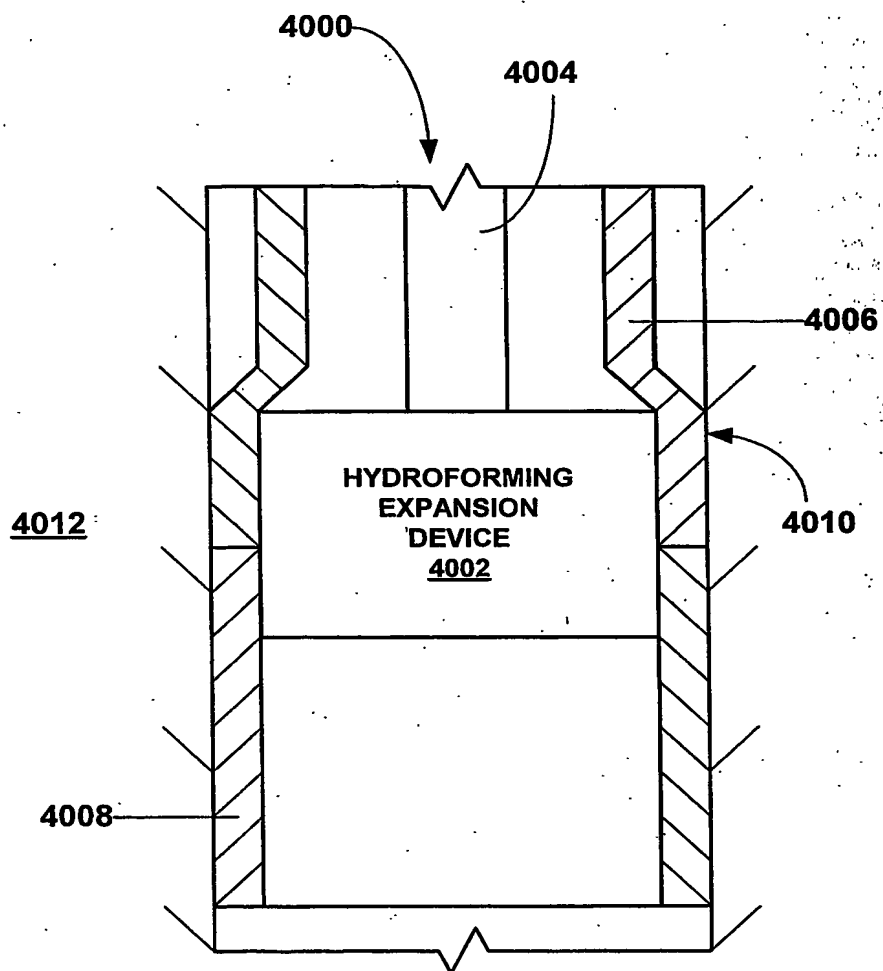


FIG. 40e

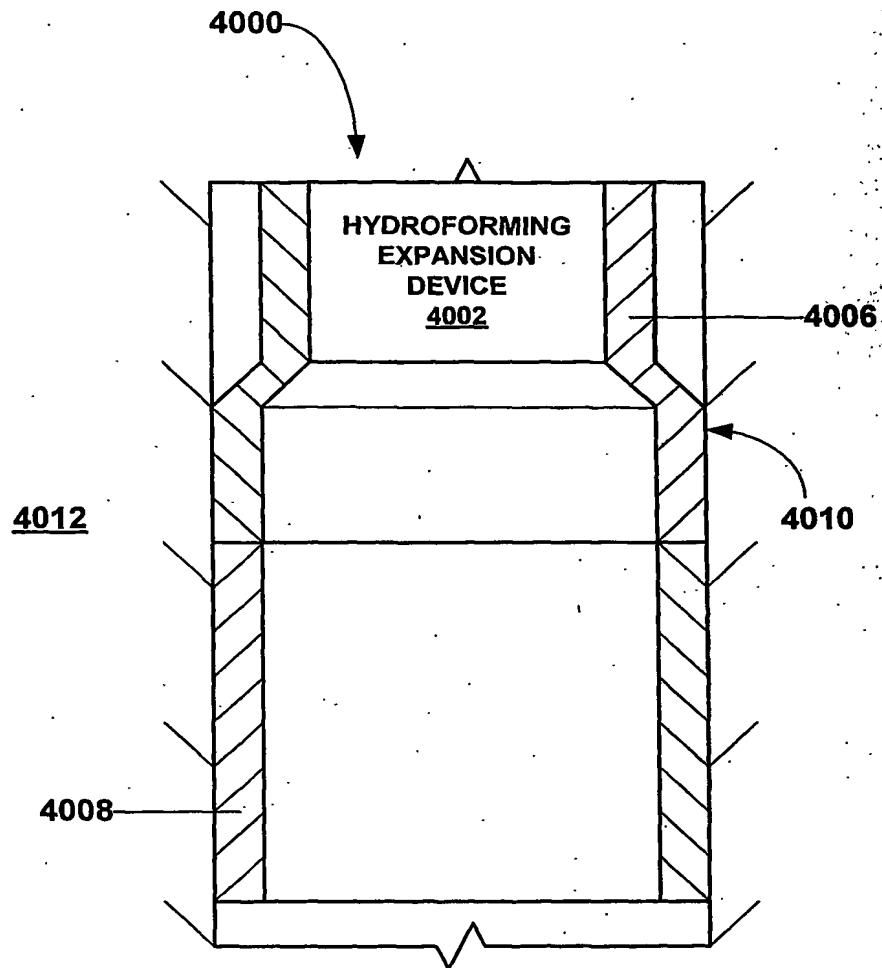


FIG. 40f

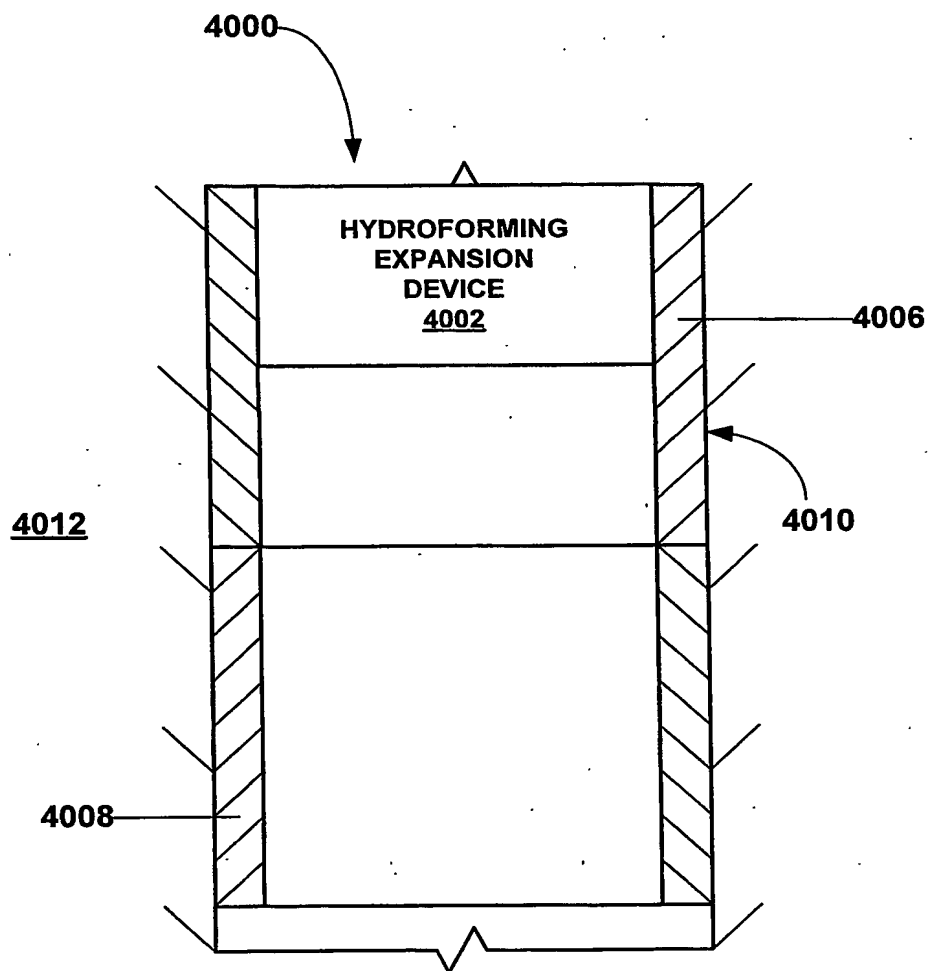


FIG. 40g

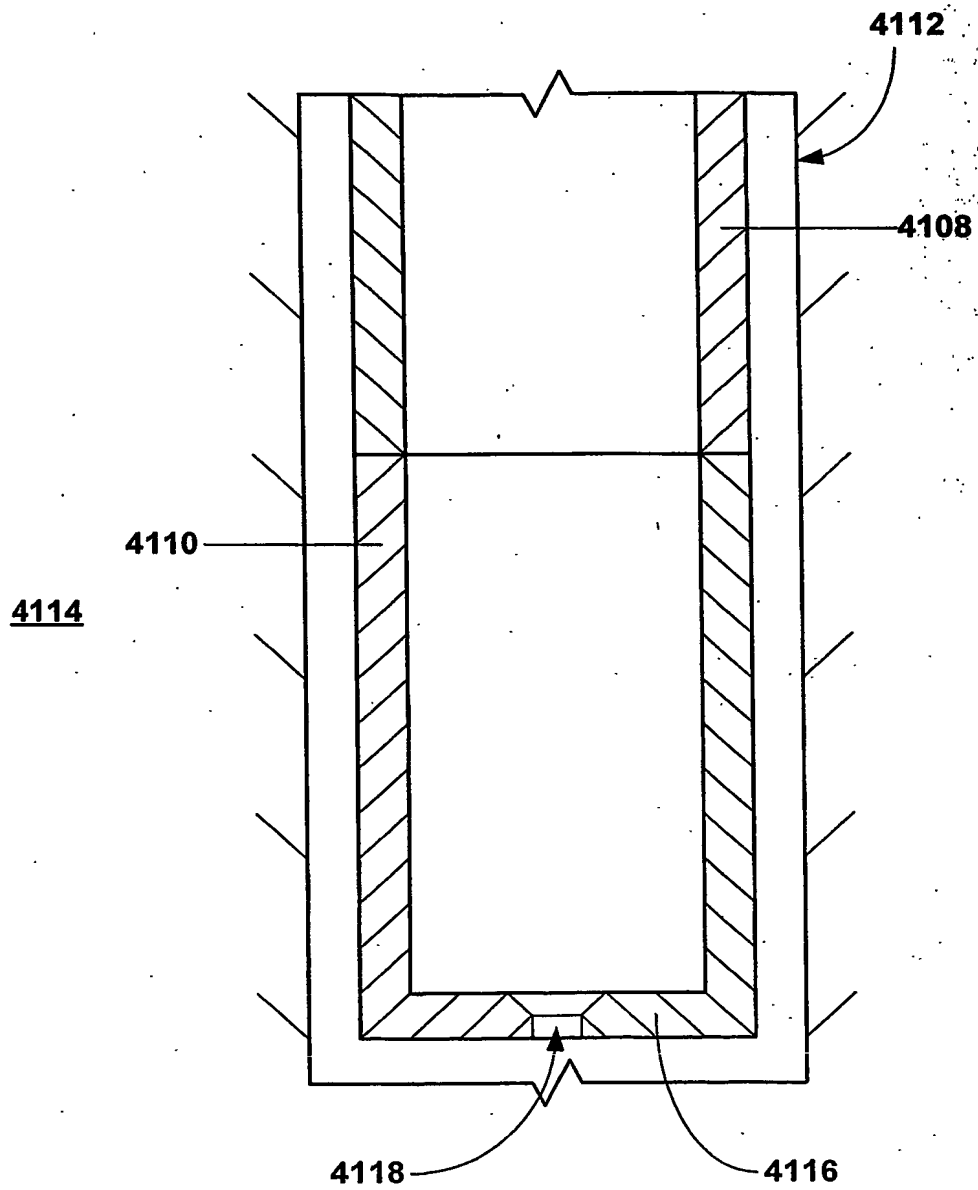


FIG. 41a

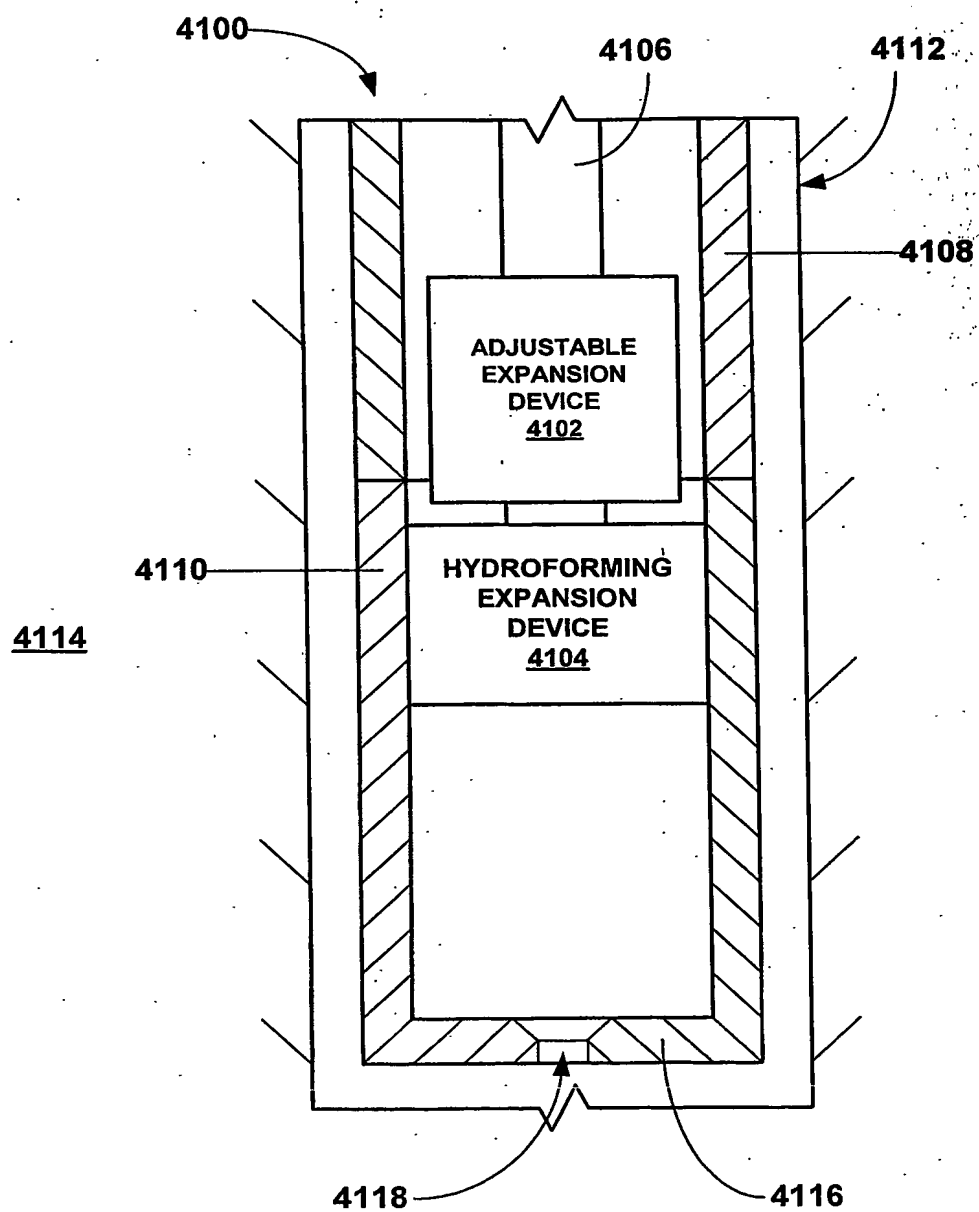


FIG. 41b

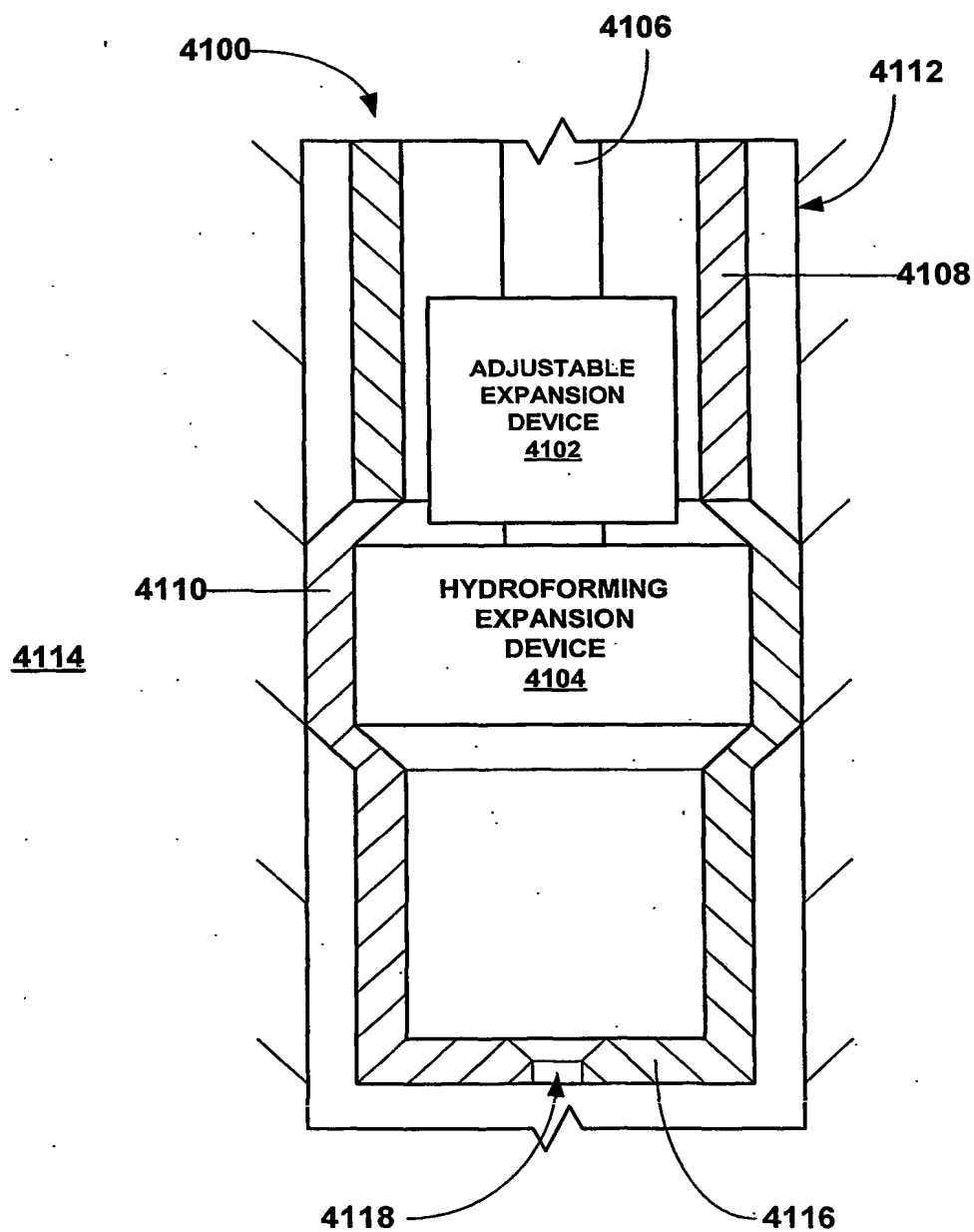


FIG. 41c

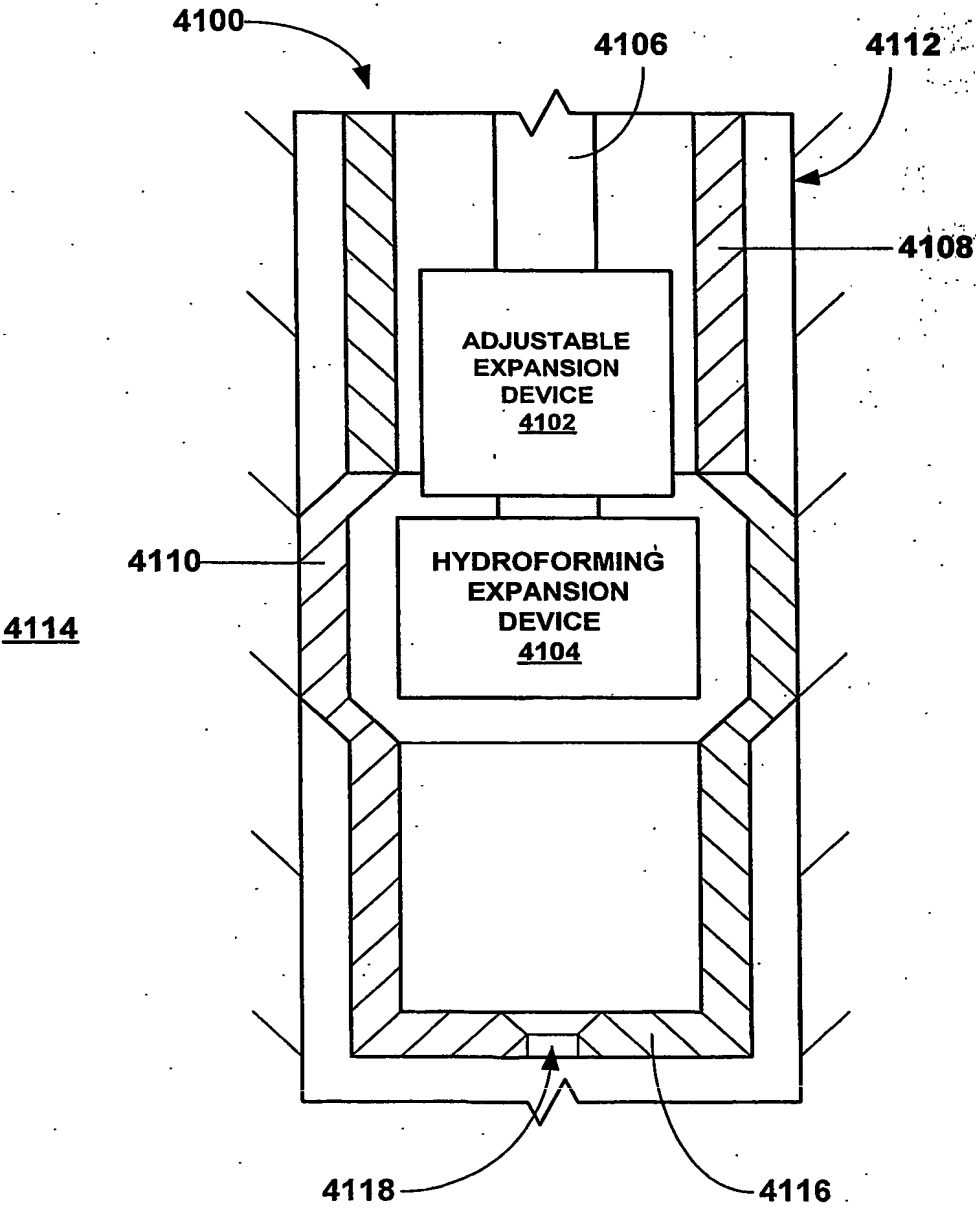


FIG. 41d

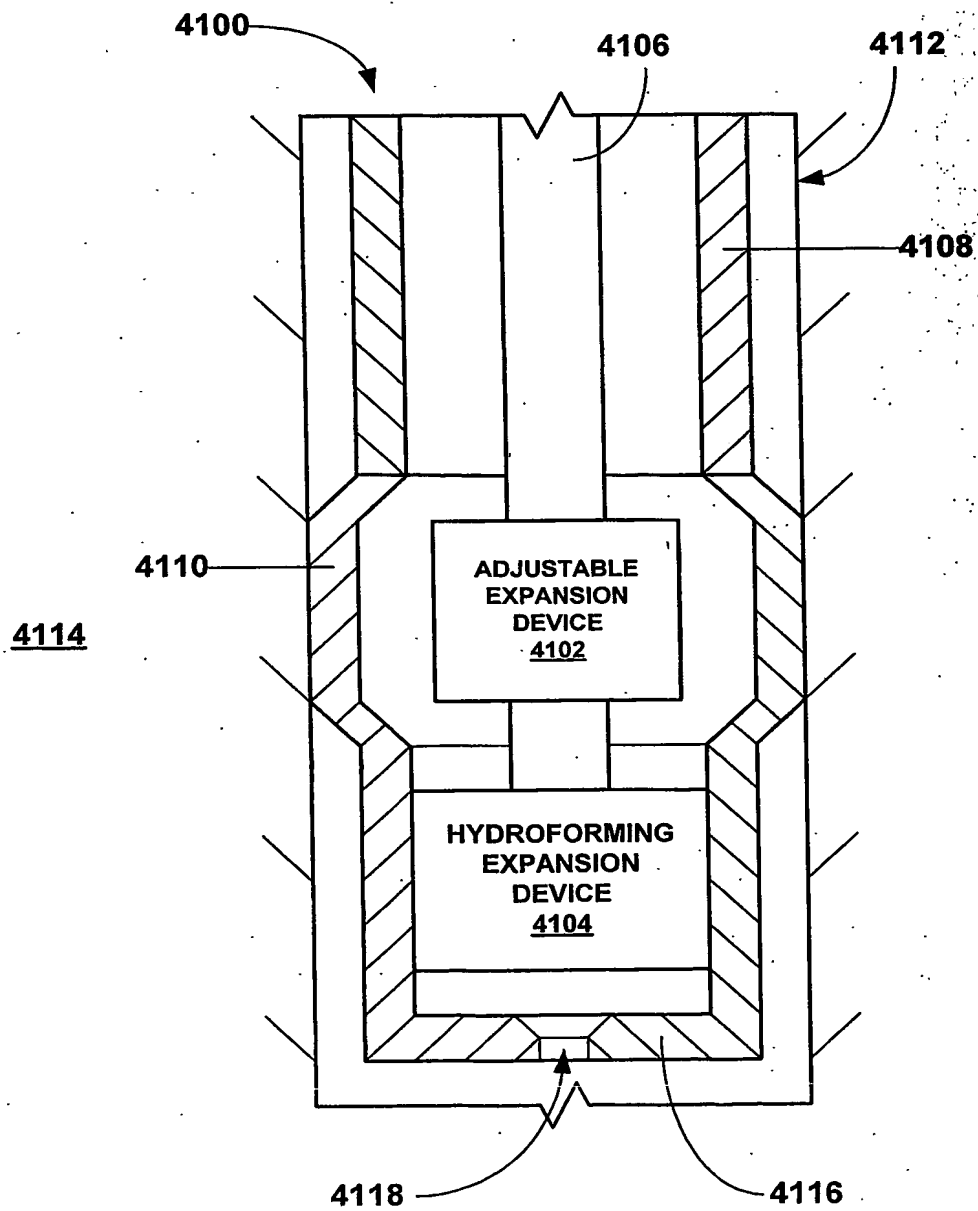


FIG. 41e

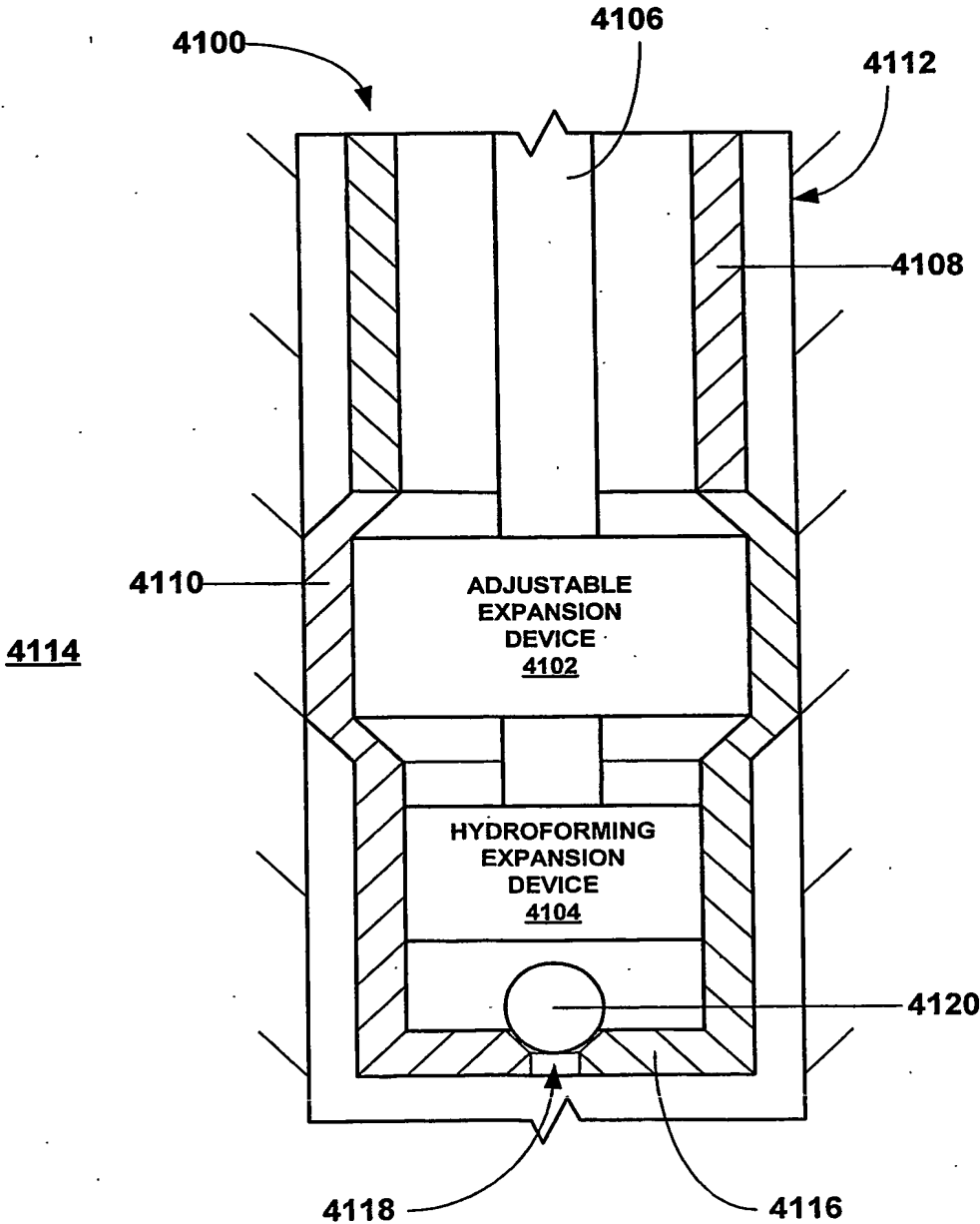


FIG. 41f

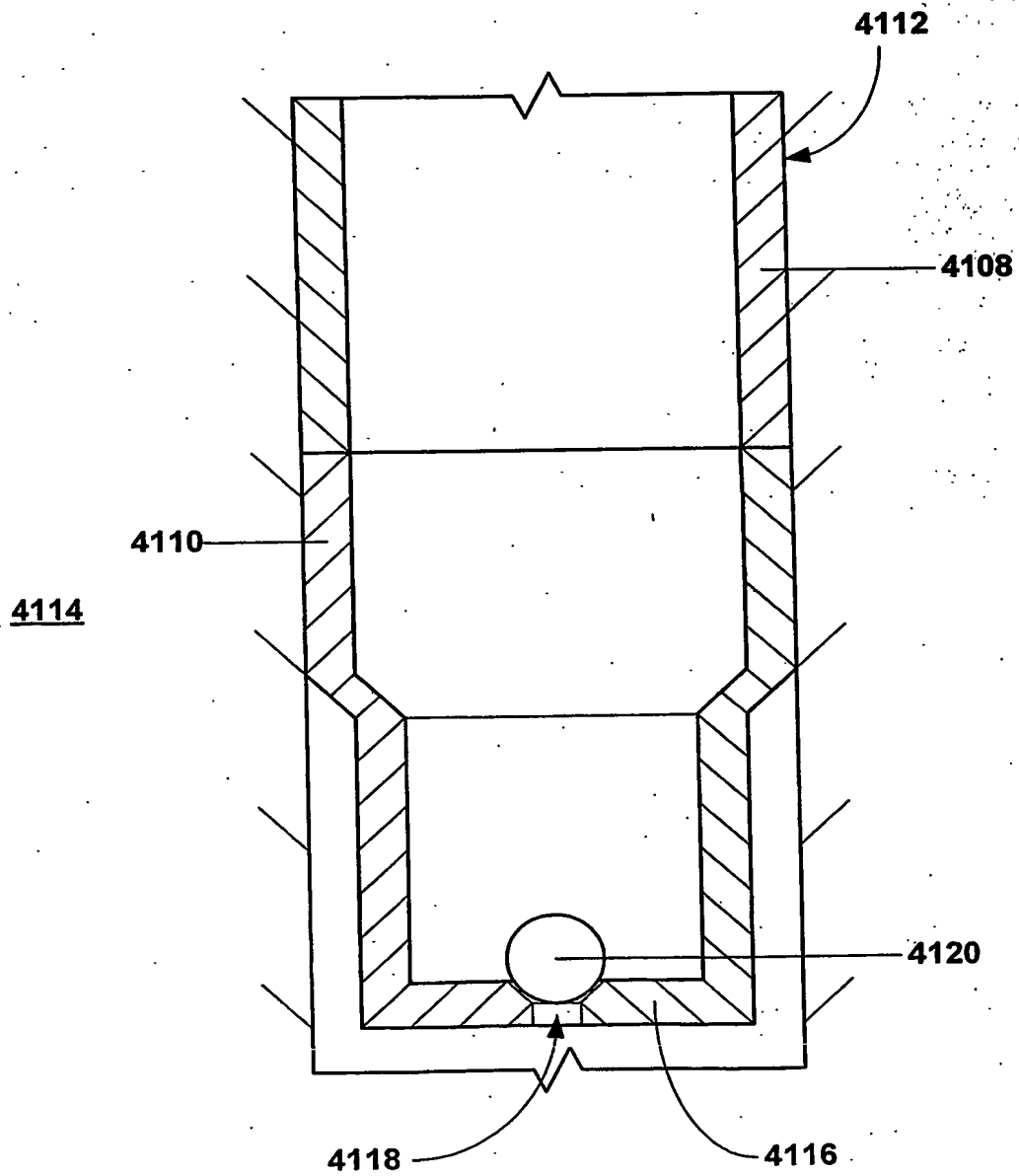


FIG. 41g

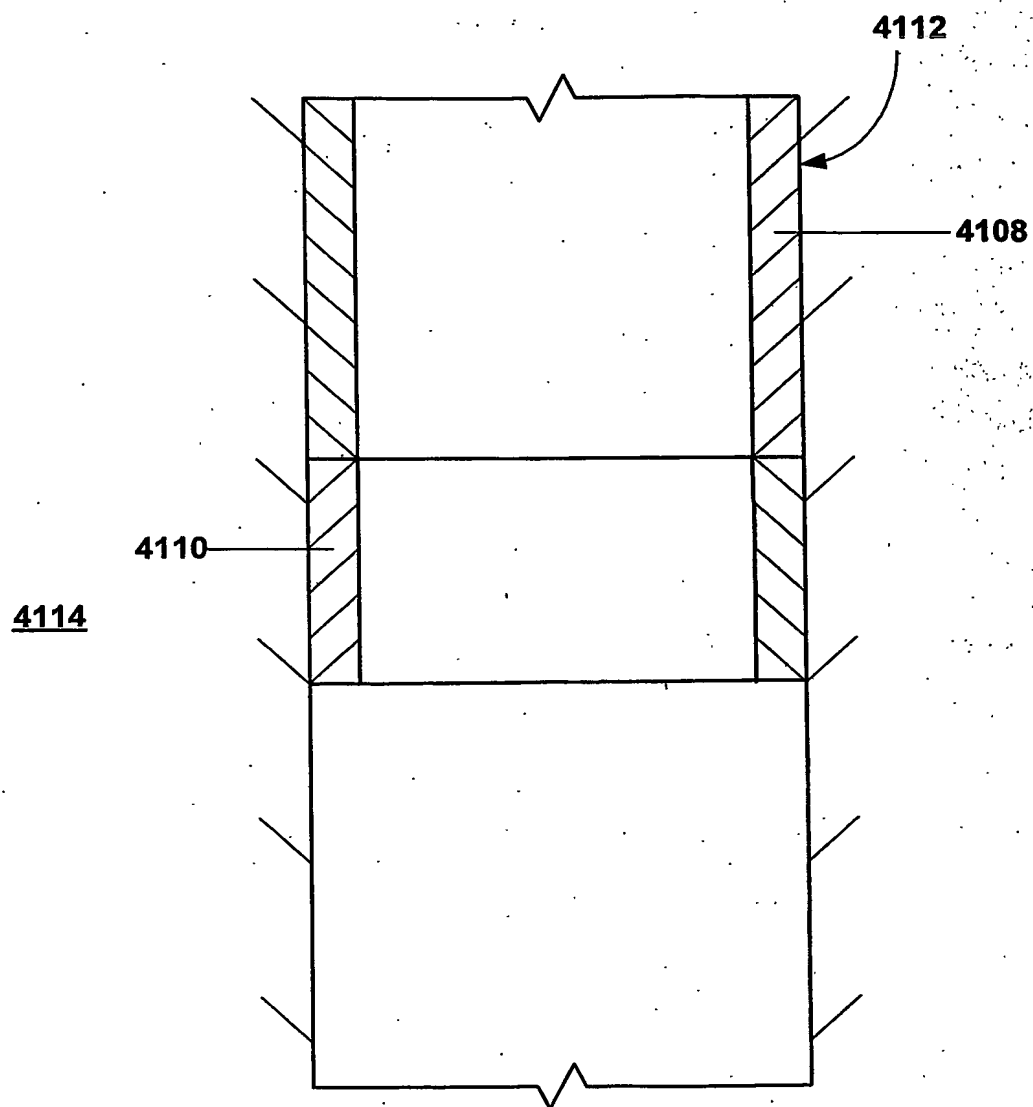


FIG. 41h

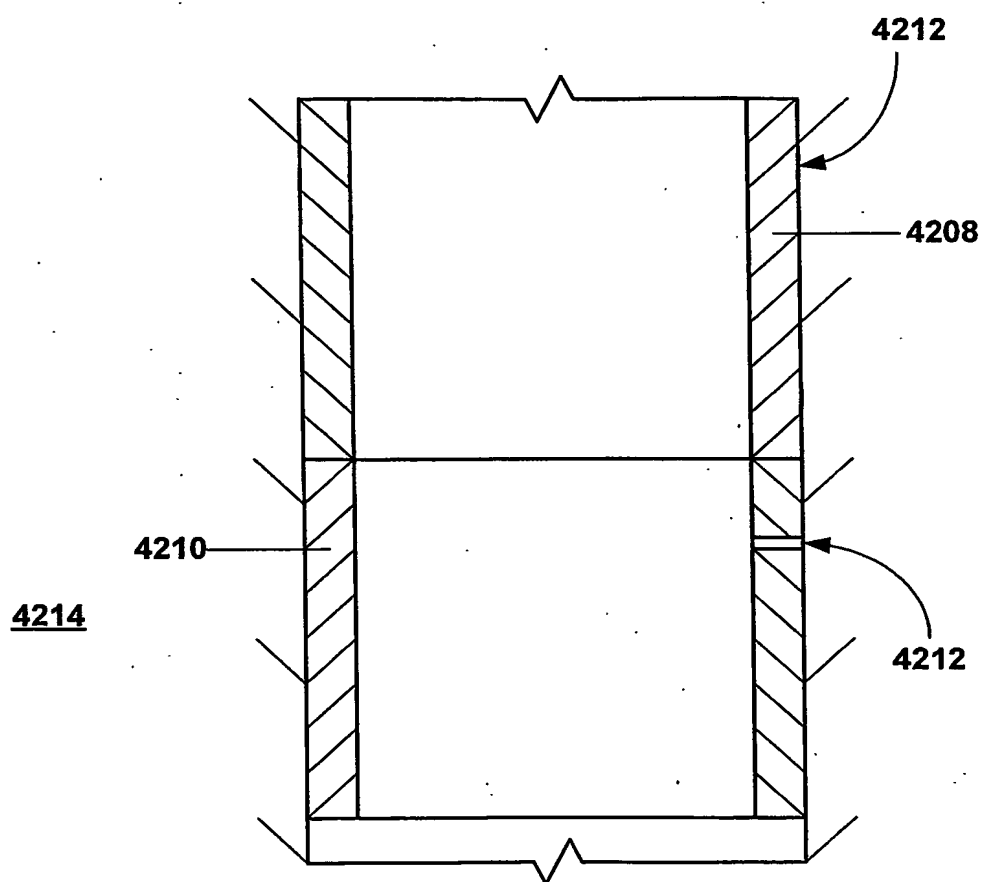


FIG. 42a

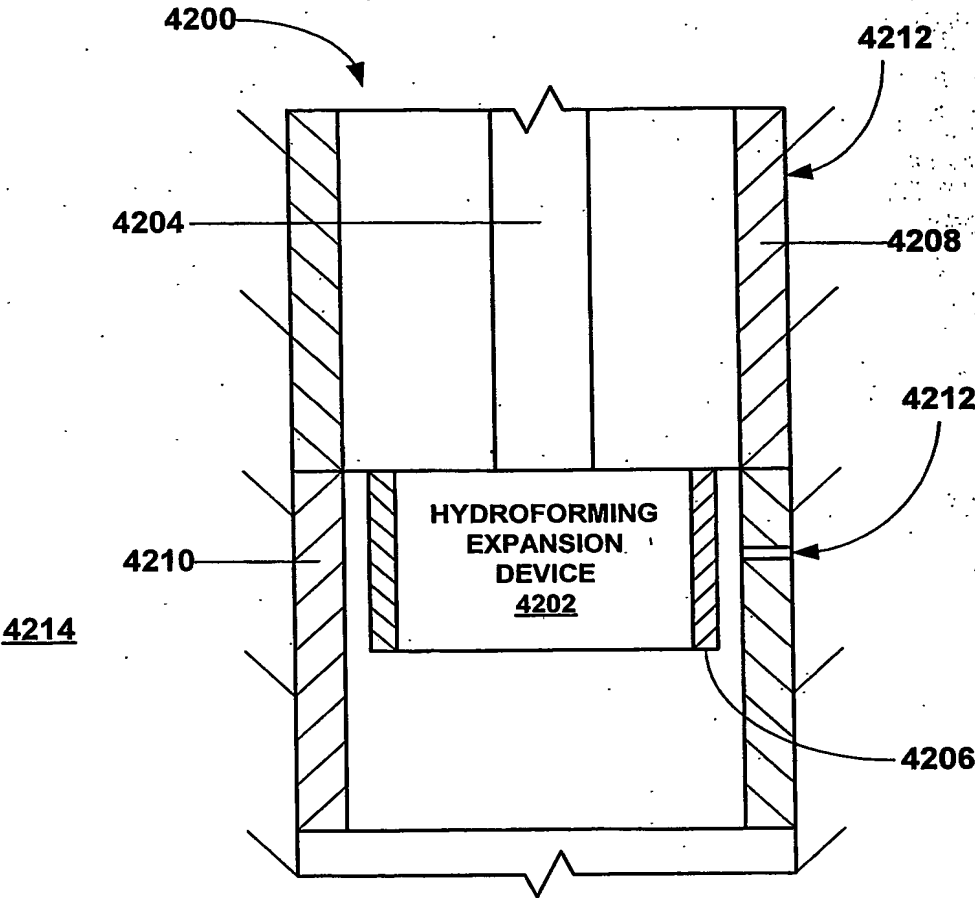


FIG. 42b

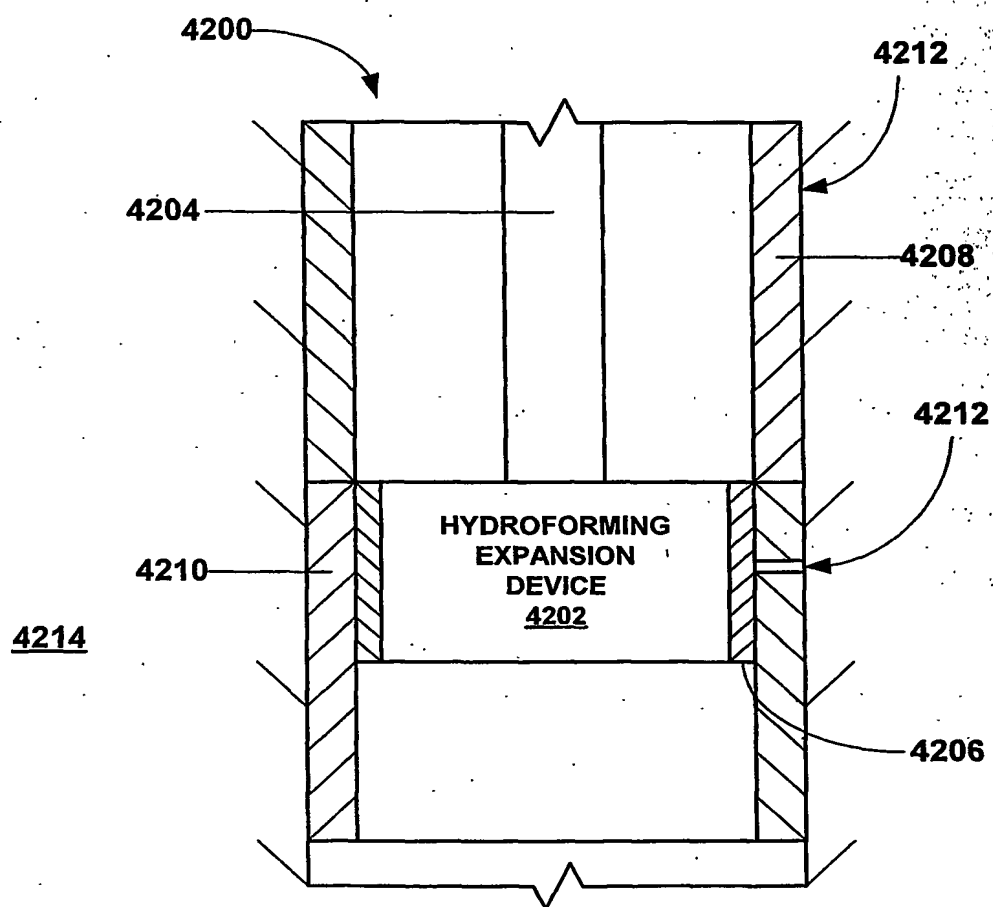


FIG. 42c

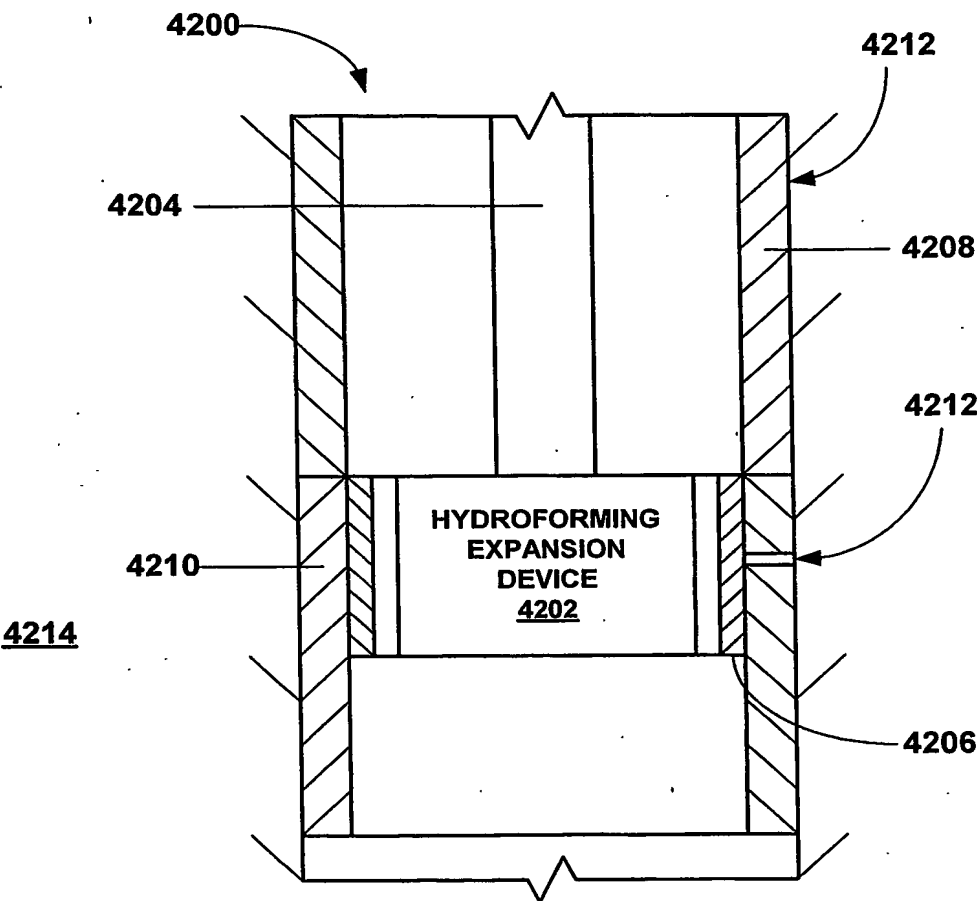


FIG. 42d

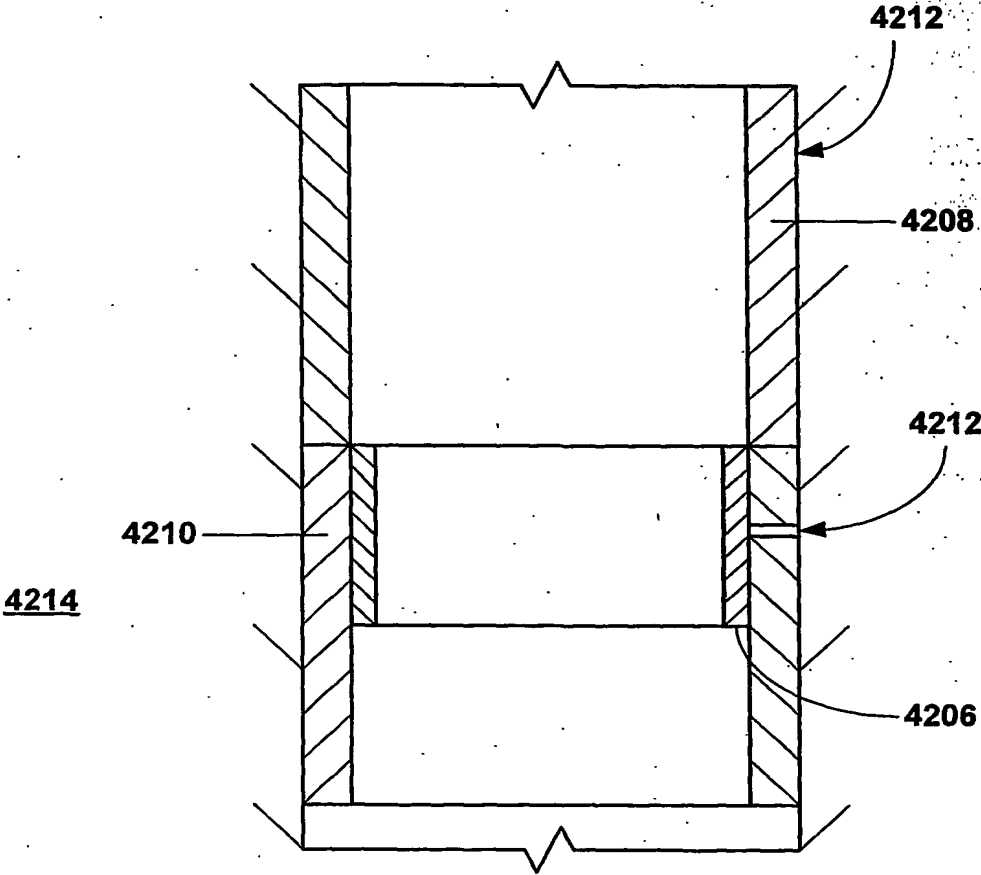


FIG. 42e

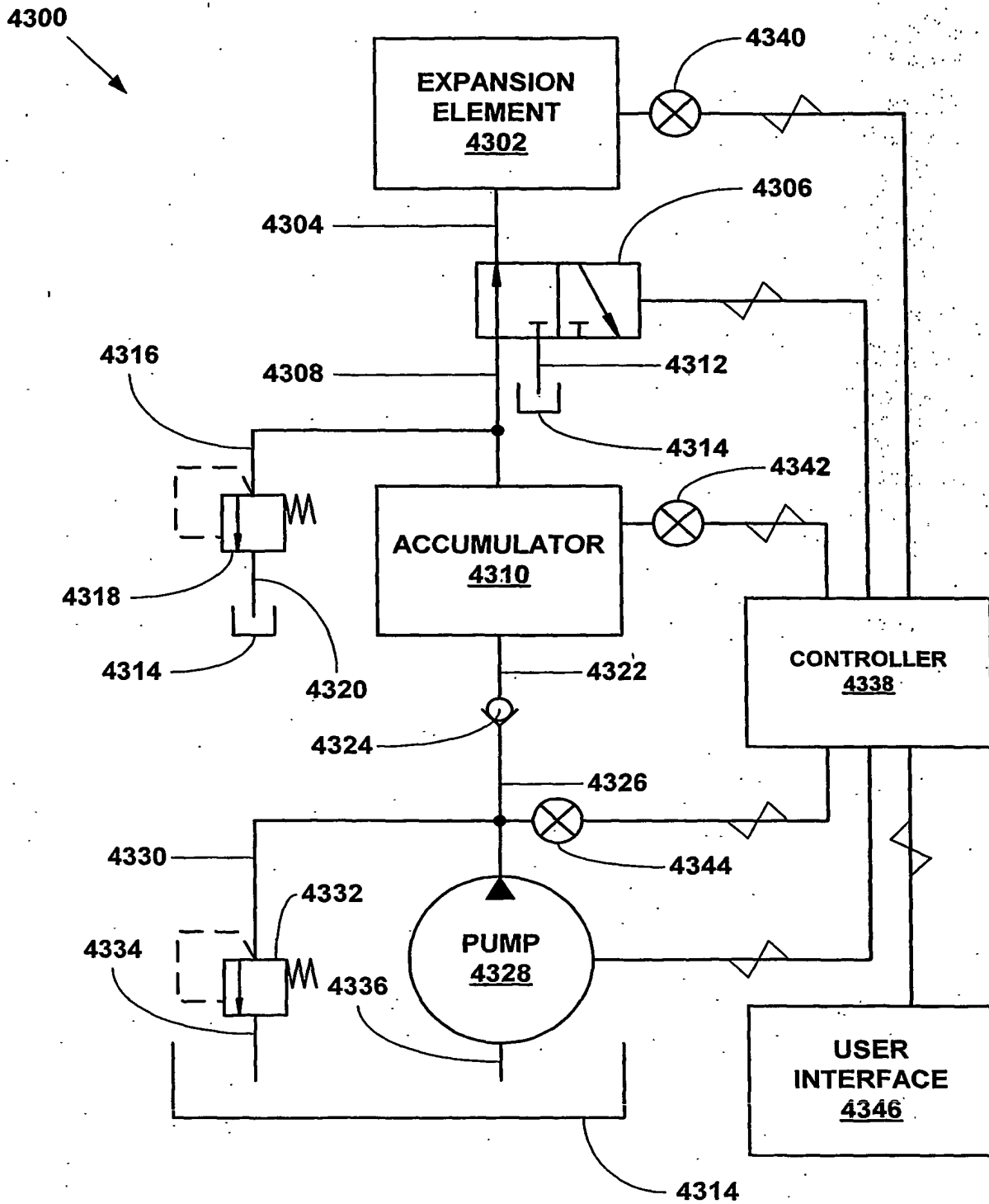


FIG. 43

4400

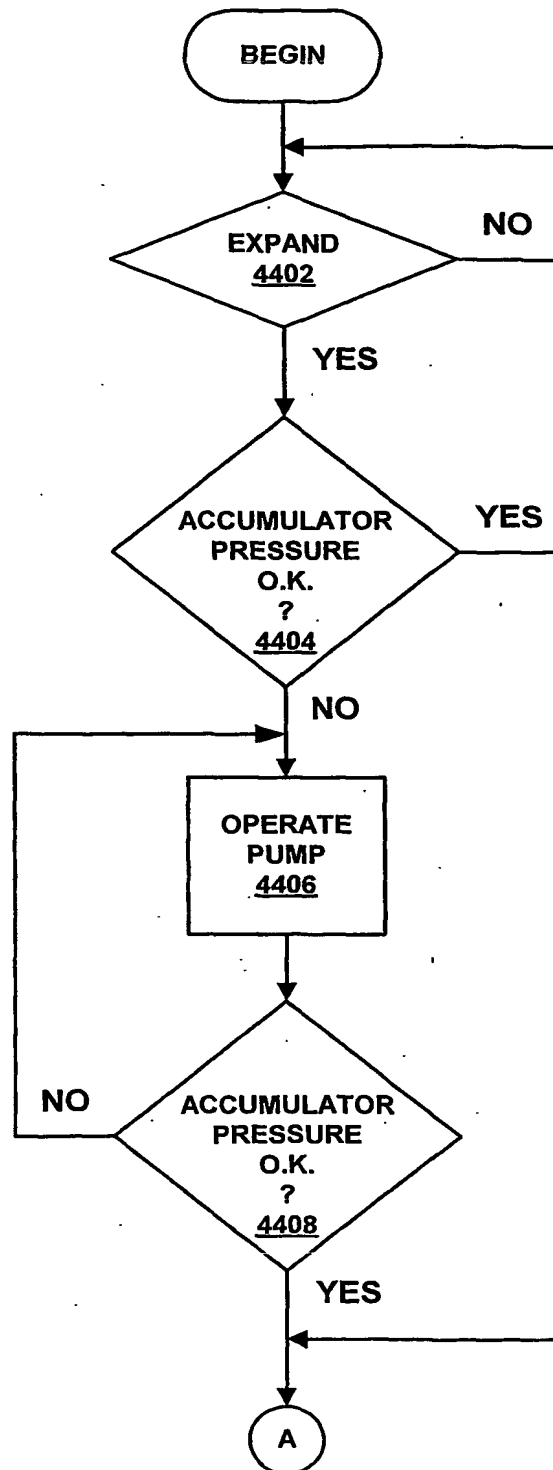


FIG. 44a

4400

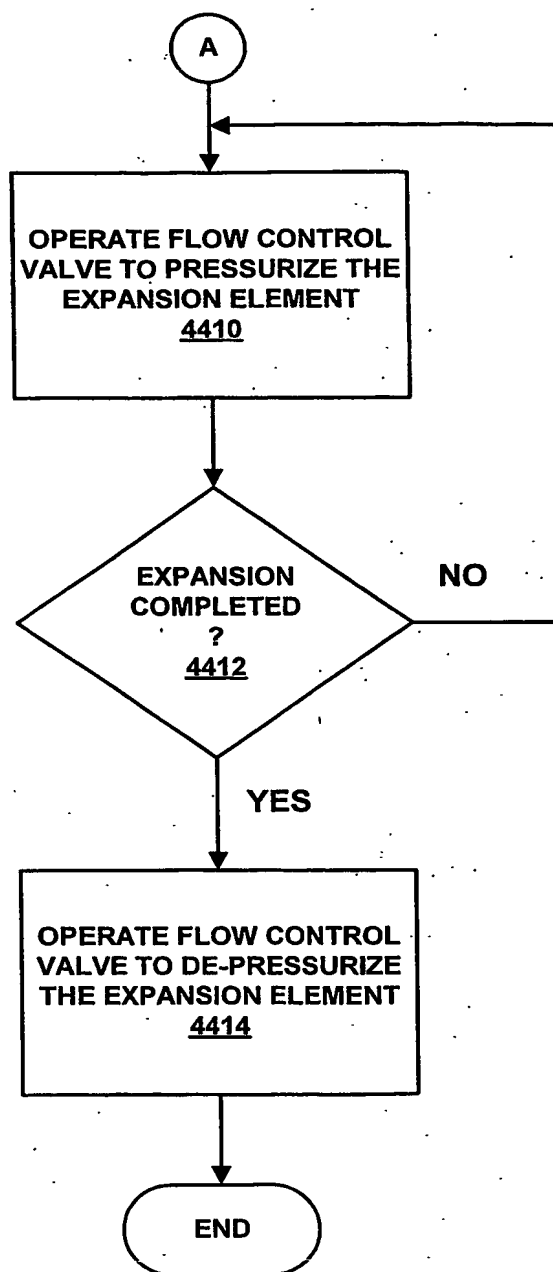
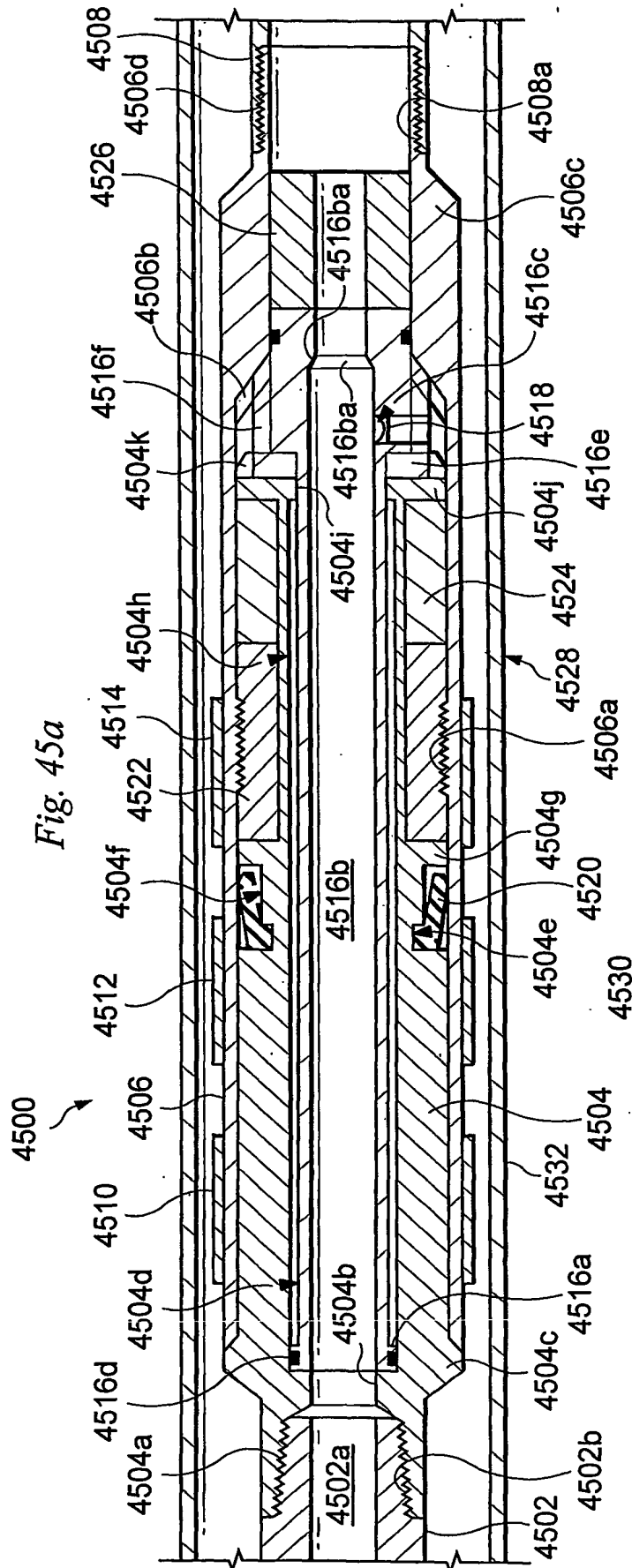
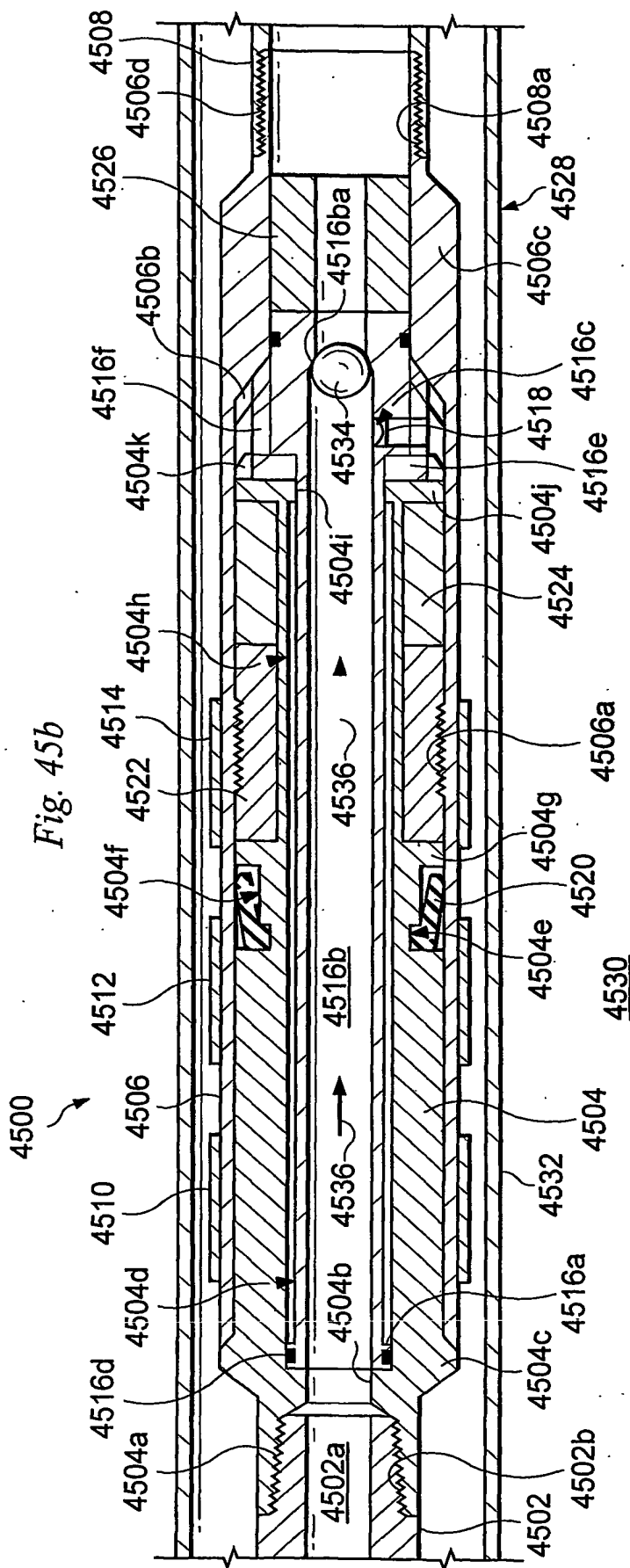
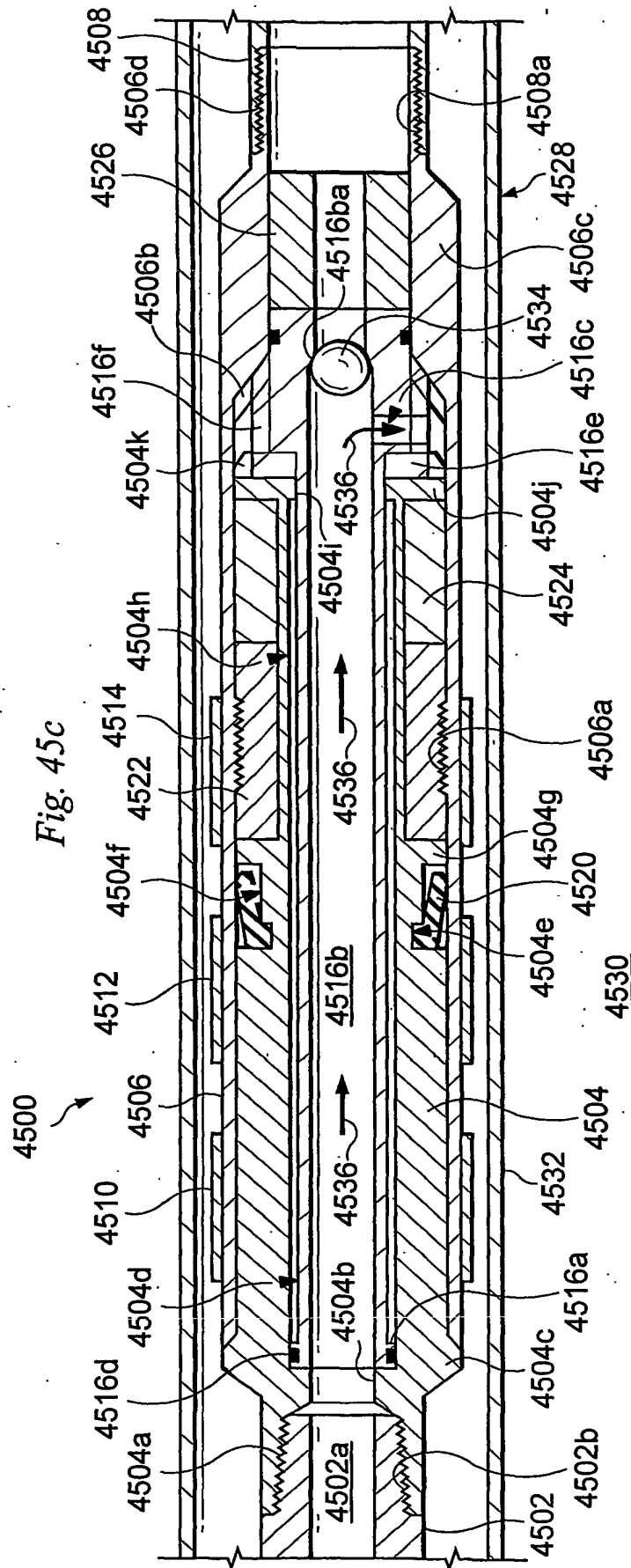
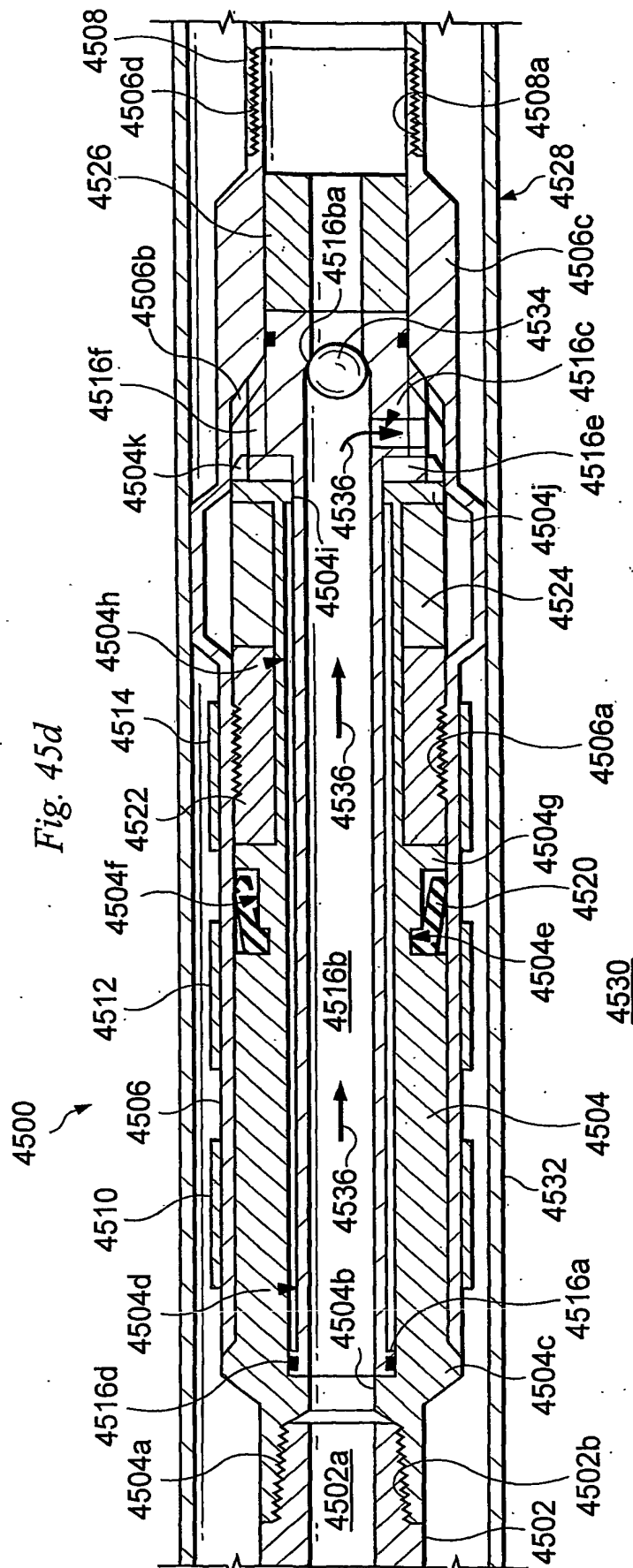


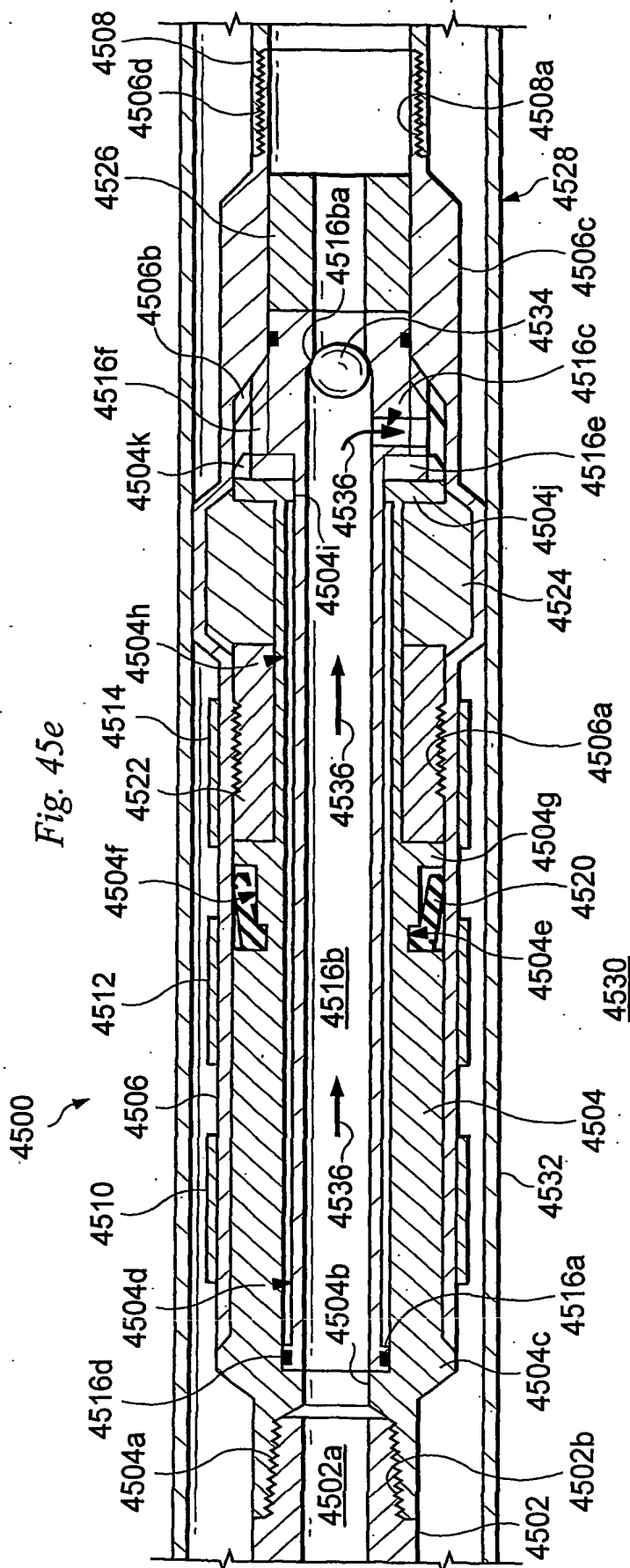
FIG. 44b

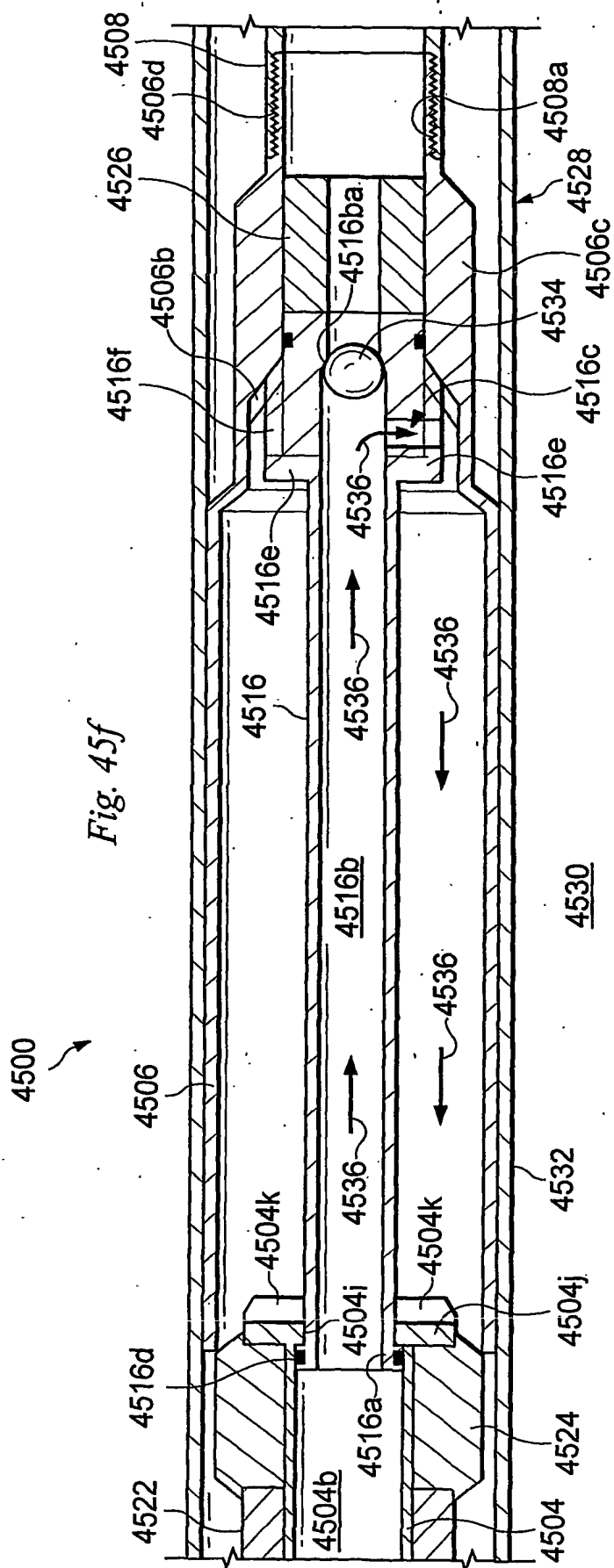


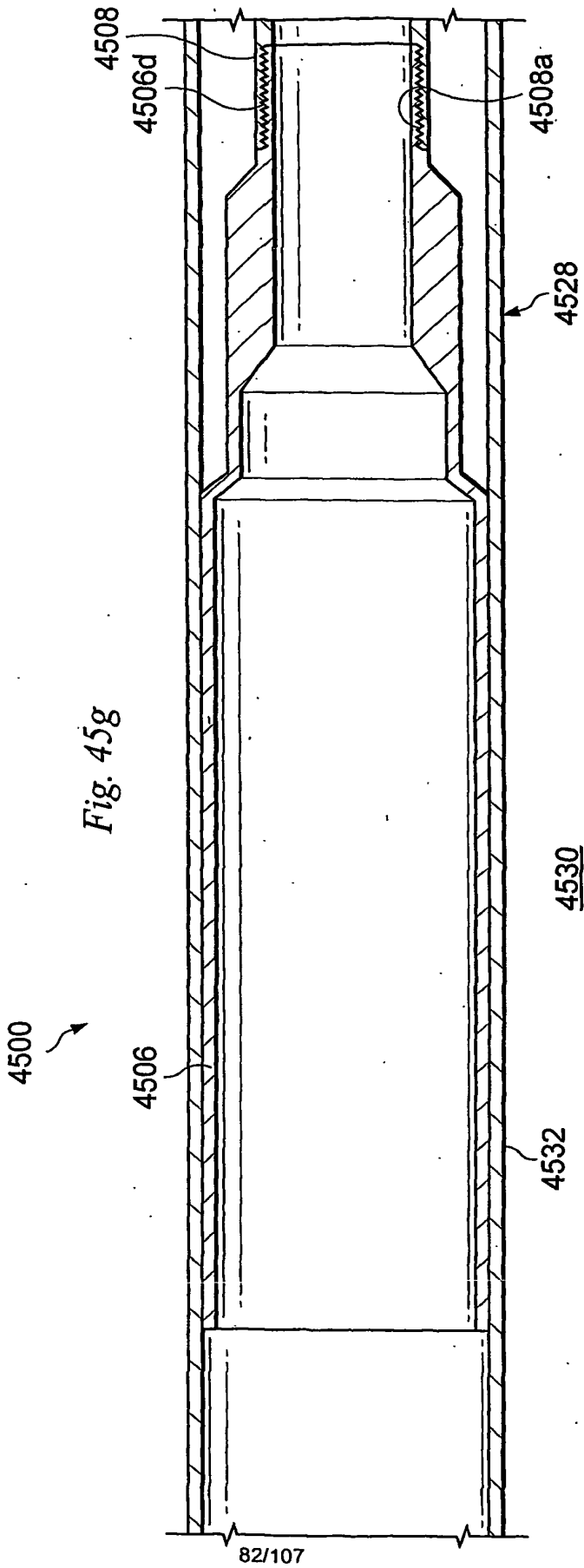












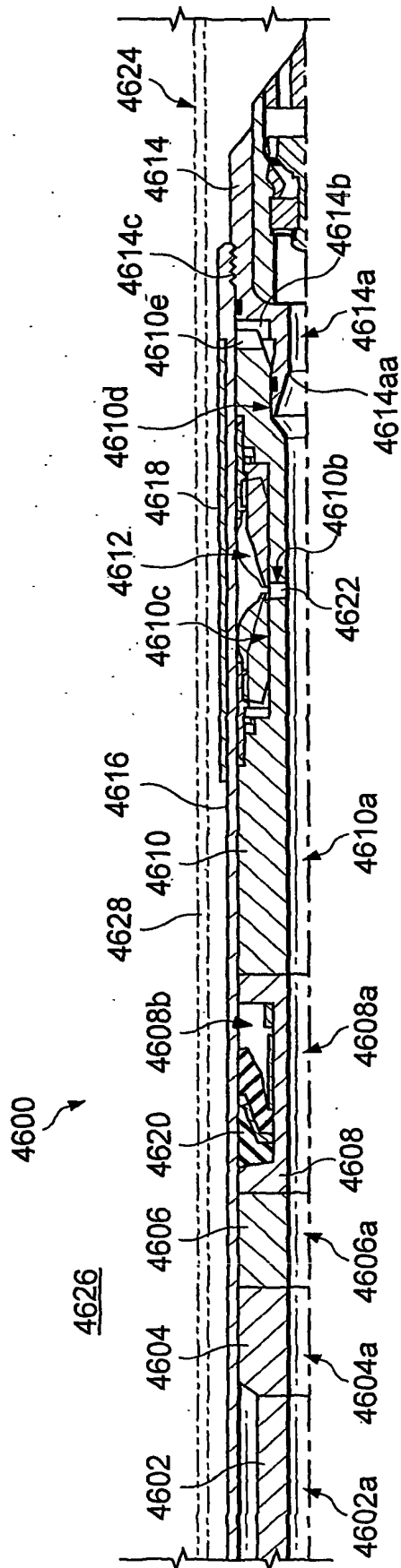


Fig. 46a

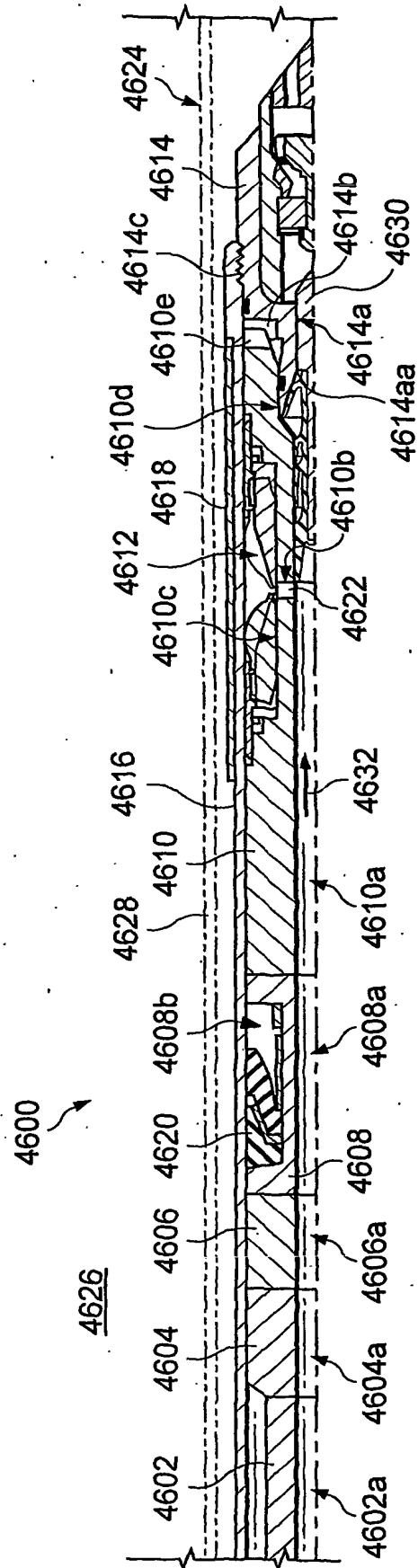
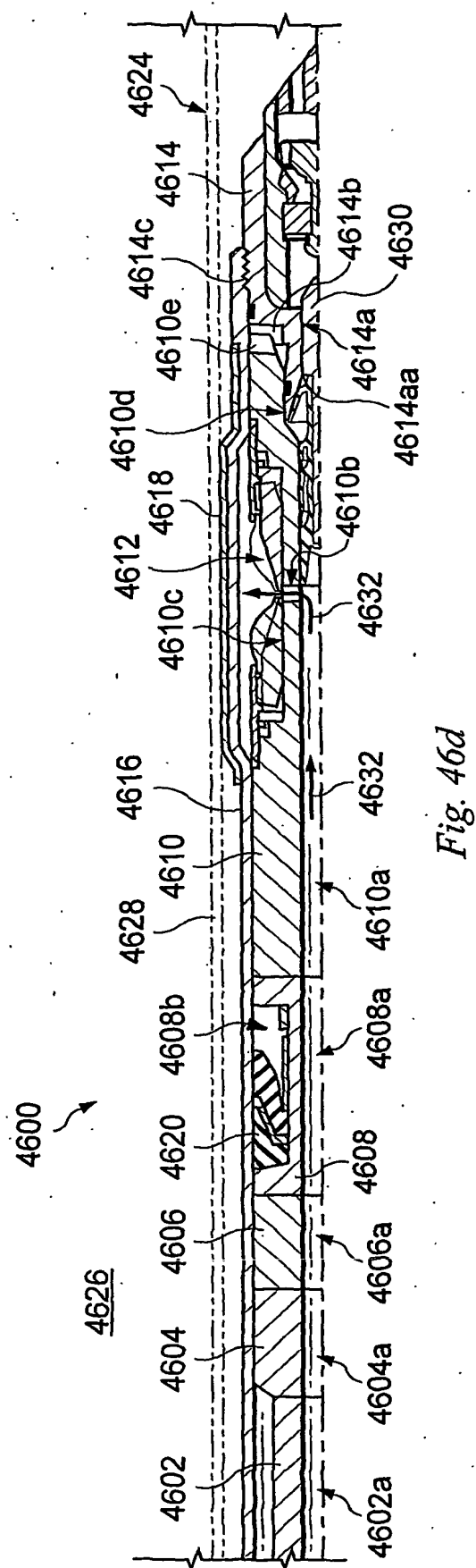
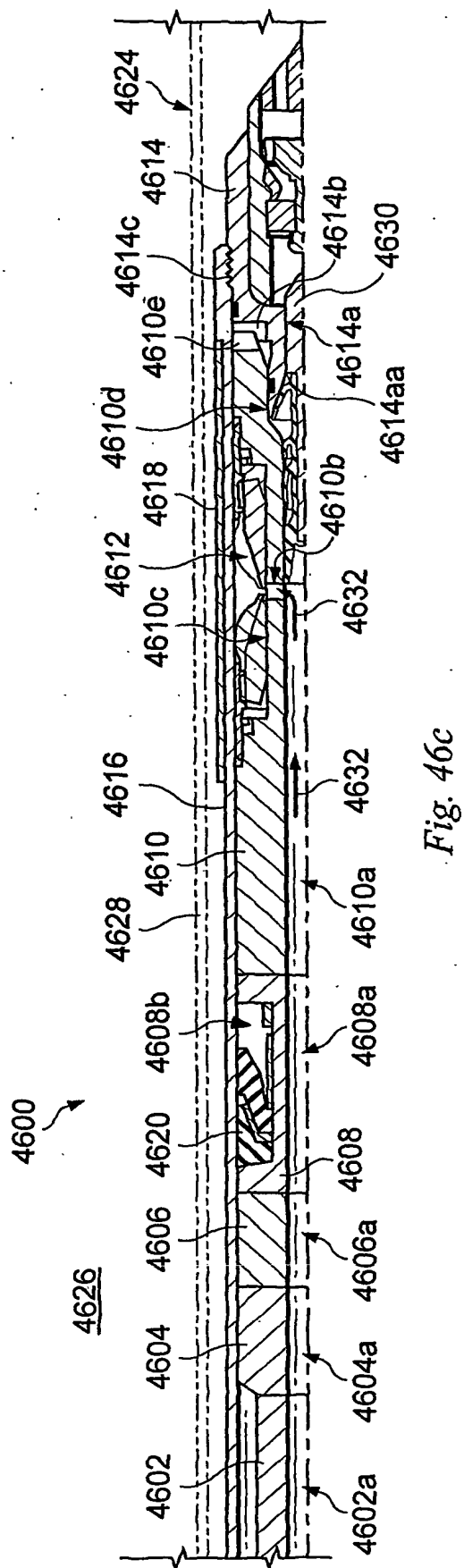


Fig. 46b



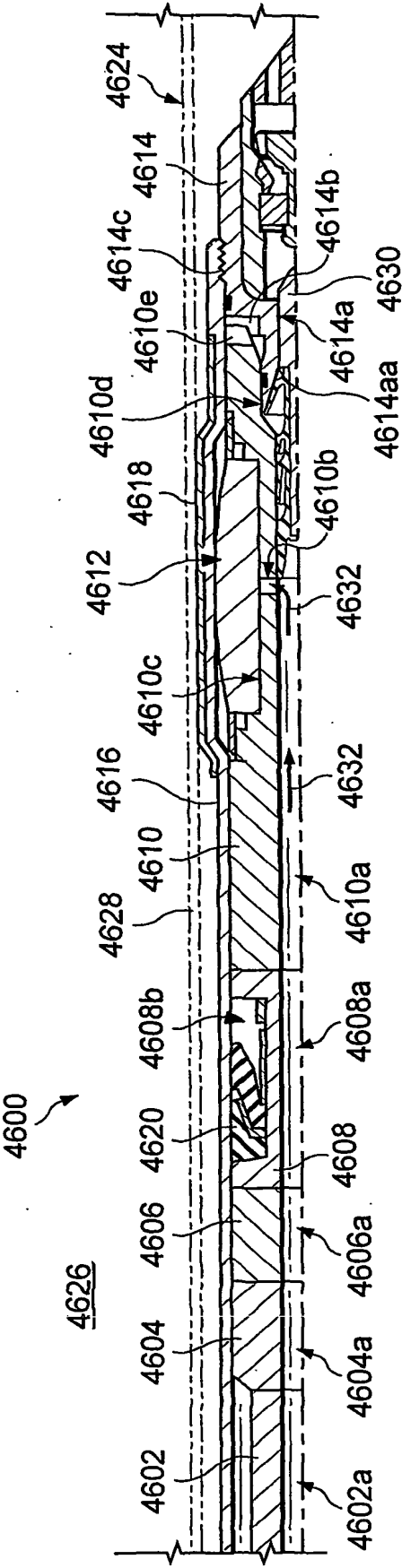


Fig. 46e

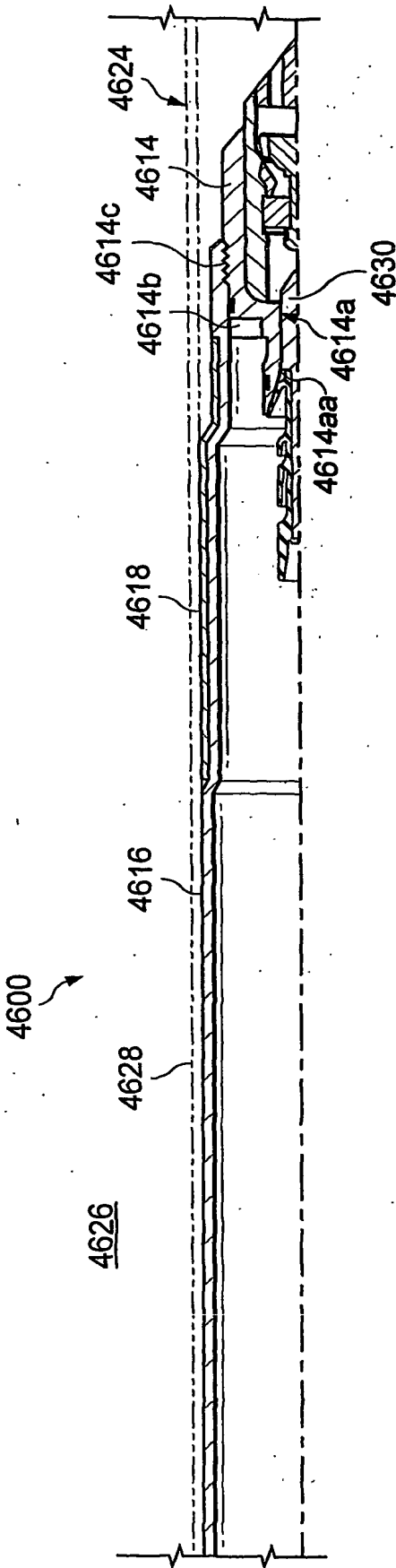


Fig. 46f

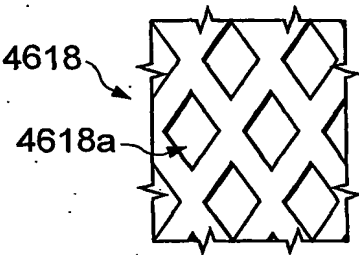


Fig. 46g

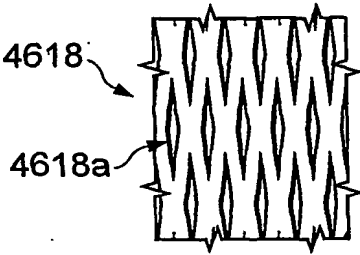


Fig. 46h

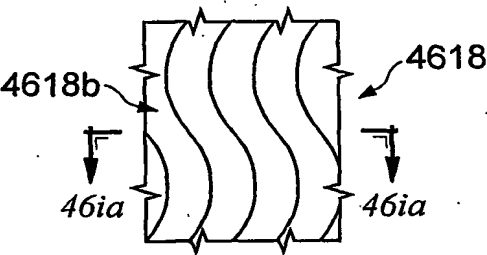


Fig. 46i

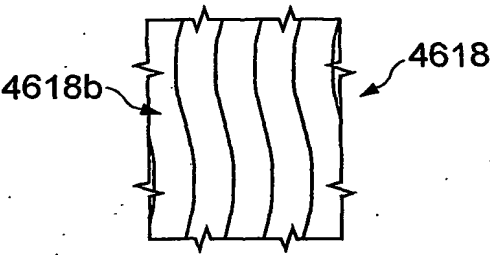


Fig. 46j

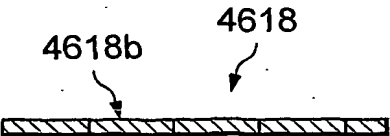


Fig. 46ia

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY ** PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

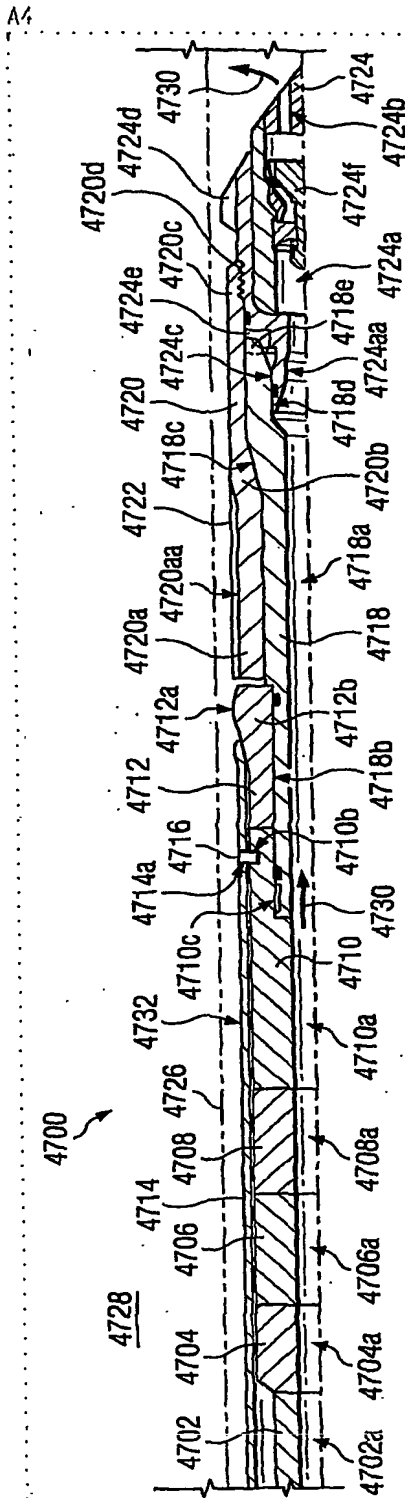


Fig. 47a

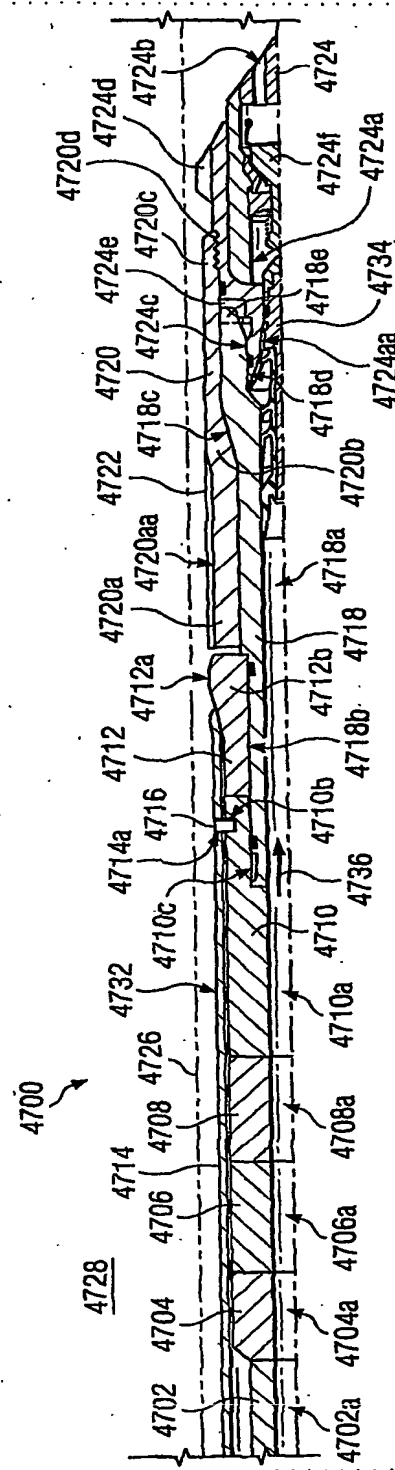


Fig. 47b

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY ** PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

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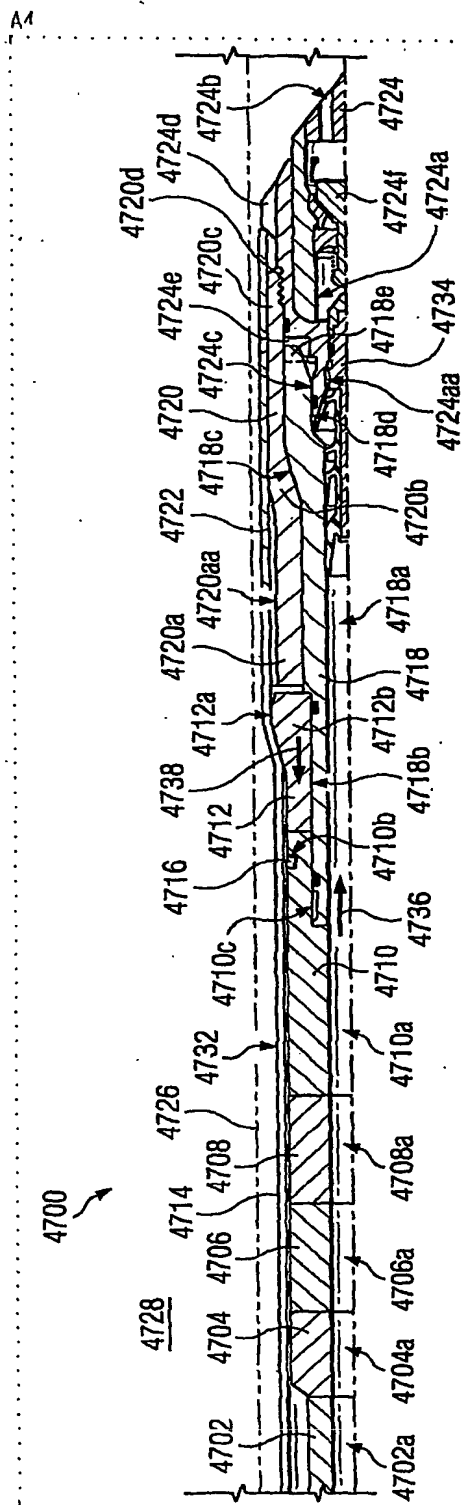


Fig. 47c

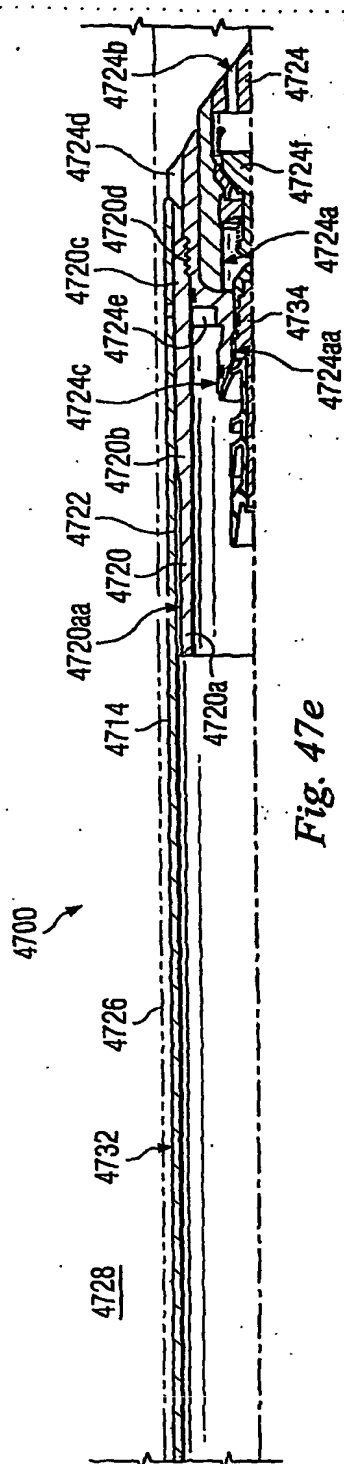


Fig. 47e

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY ** PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

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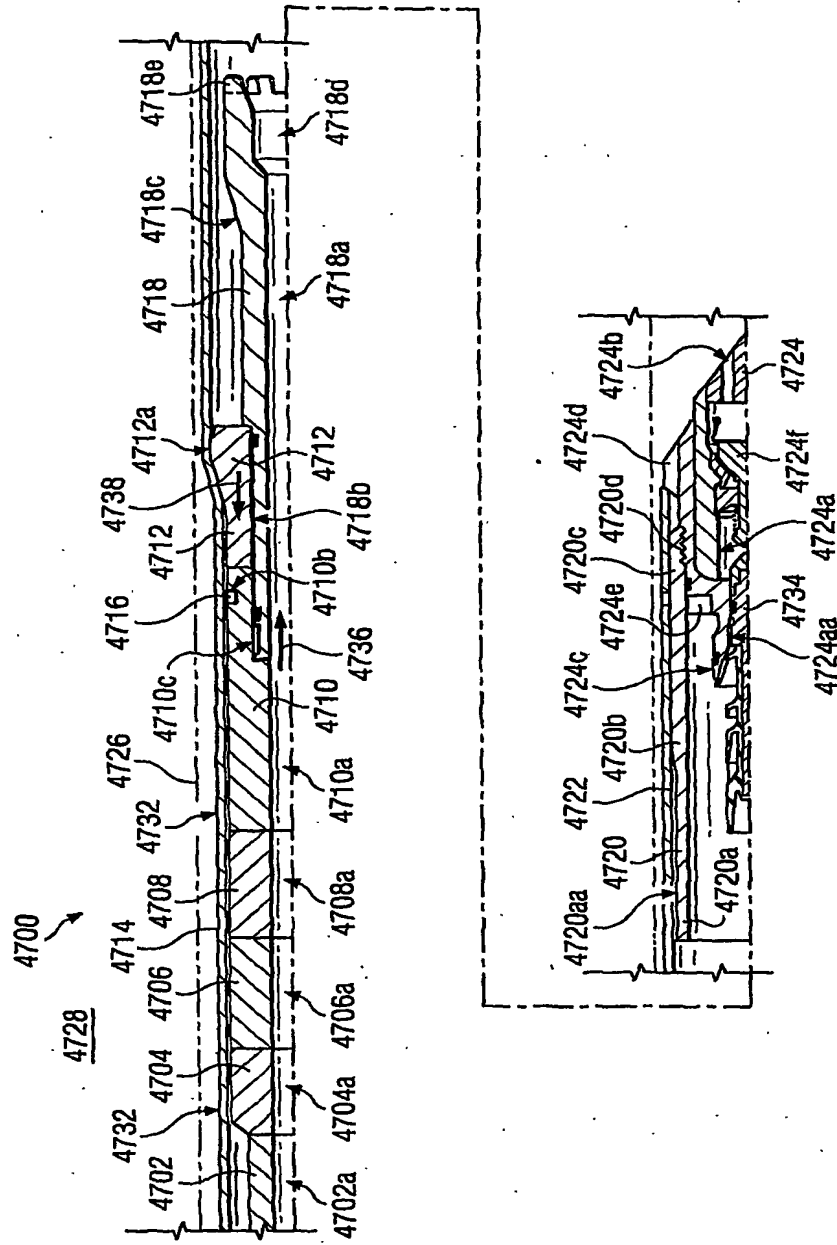


Fig. 47d

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

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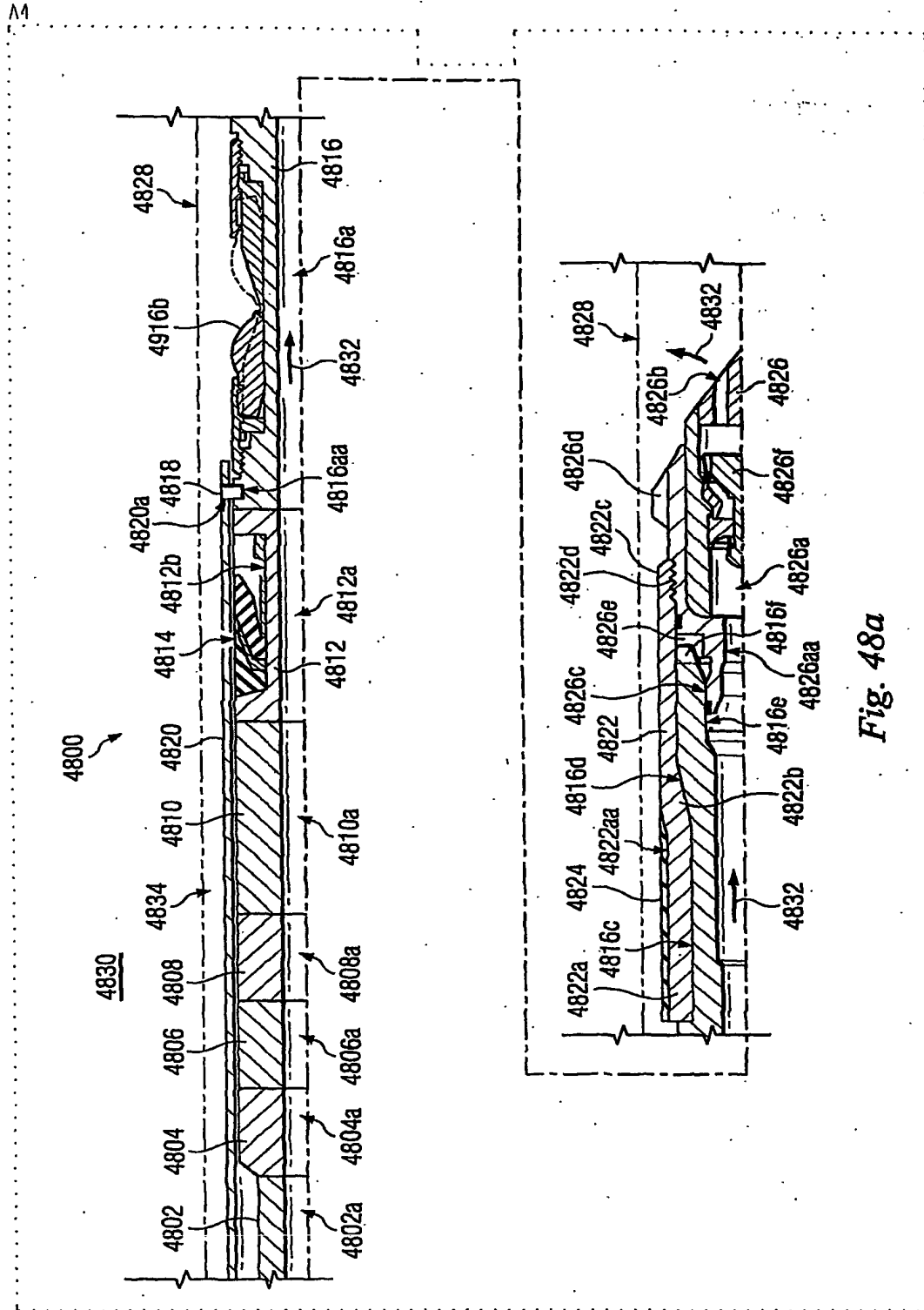


Fig. 48a

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

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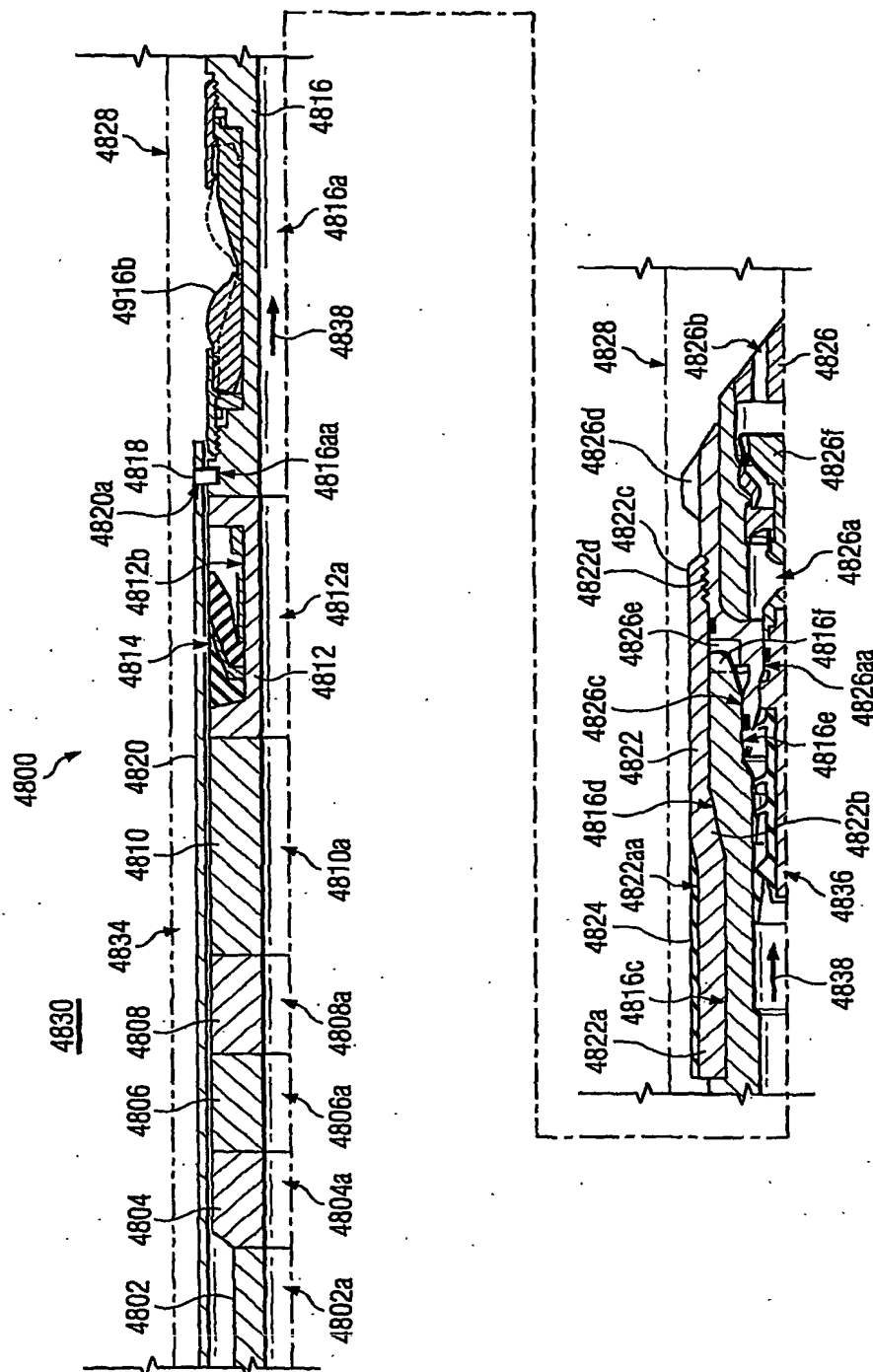


Fig. 48b

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

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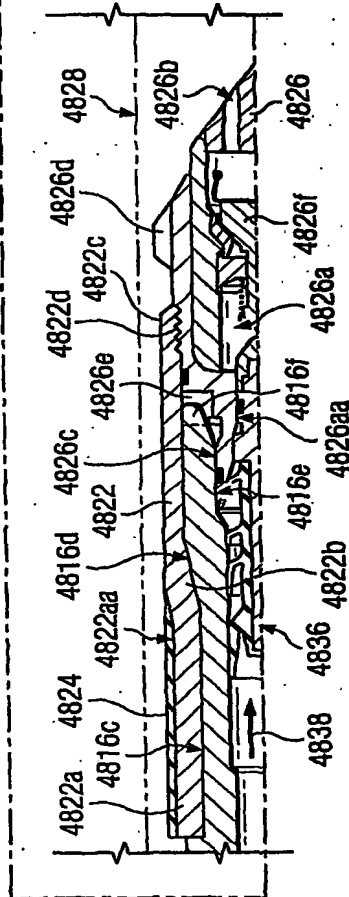
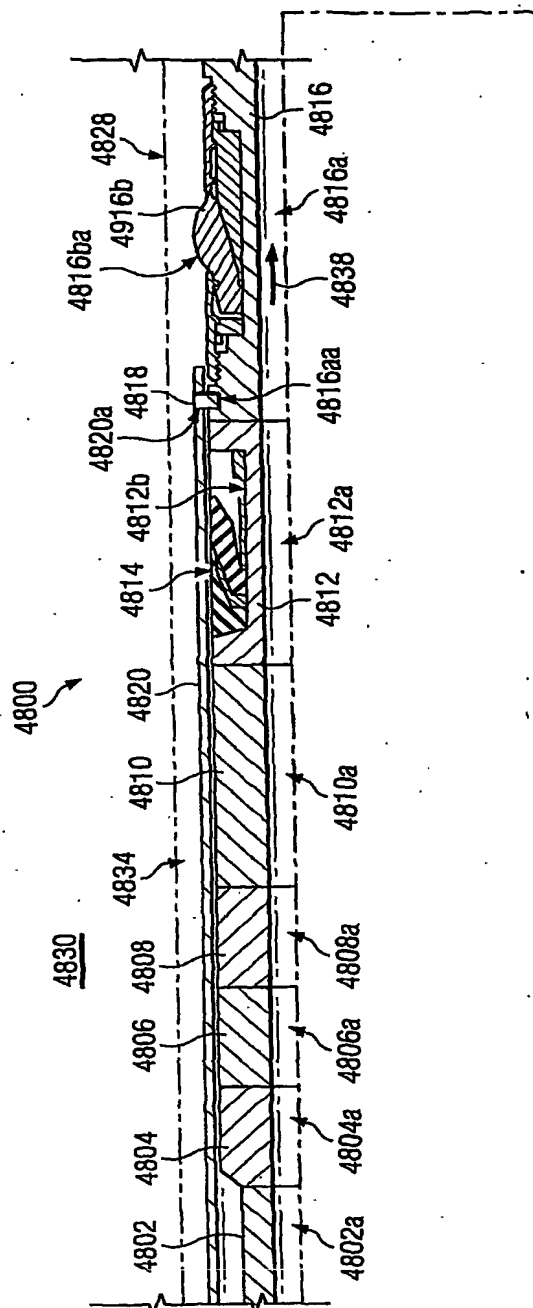


Fig. 48c

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

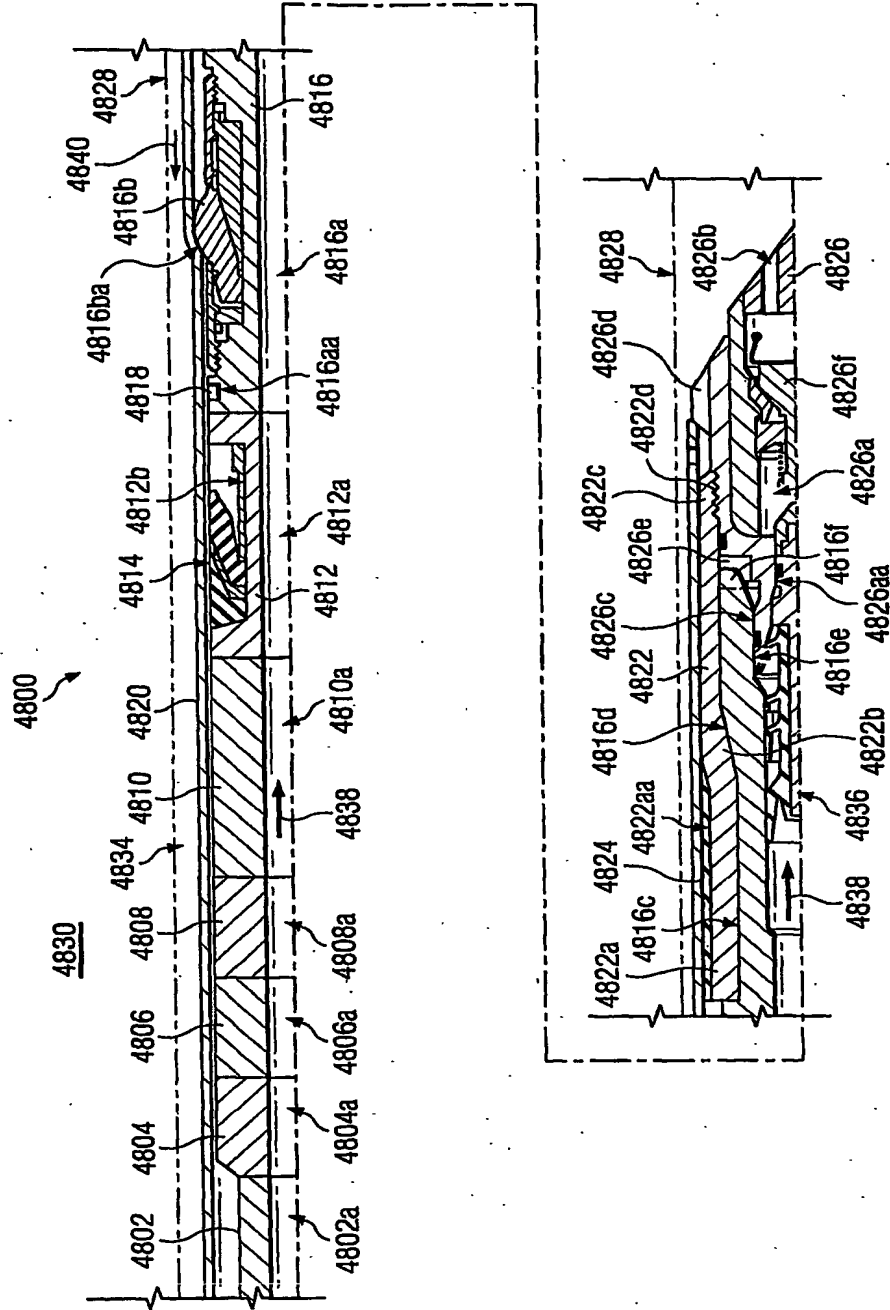
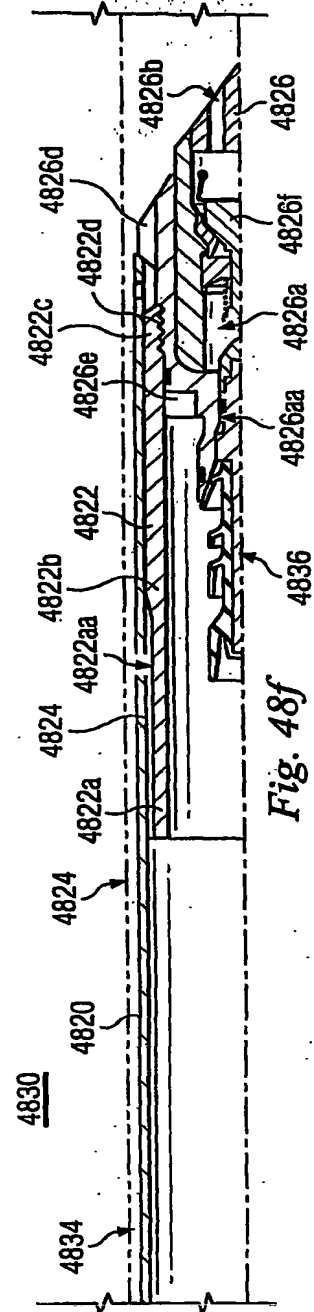
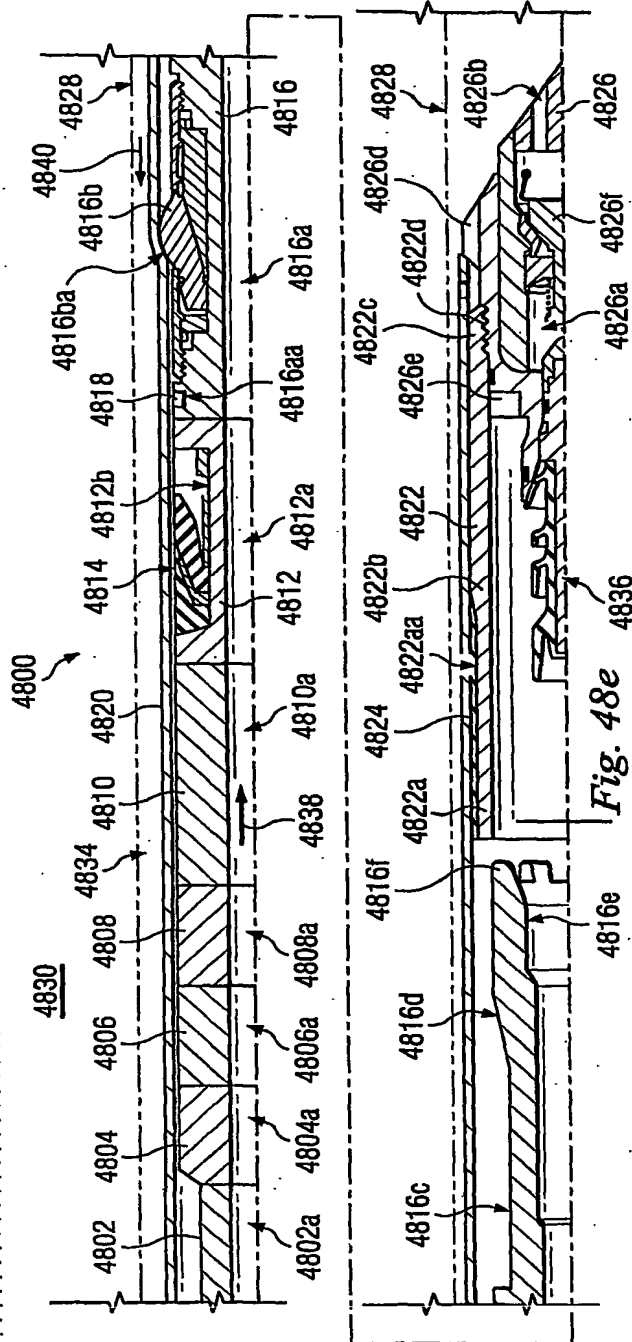


Fig. 48d

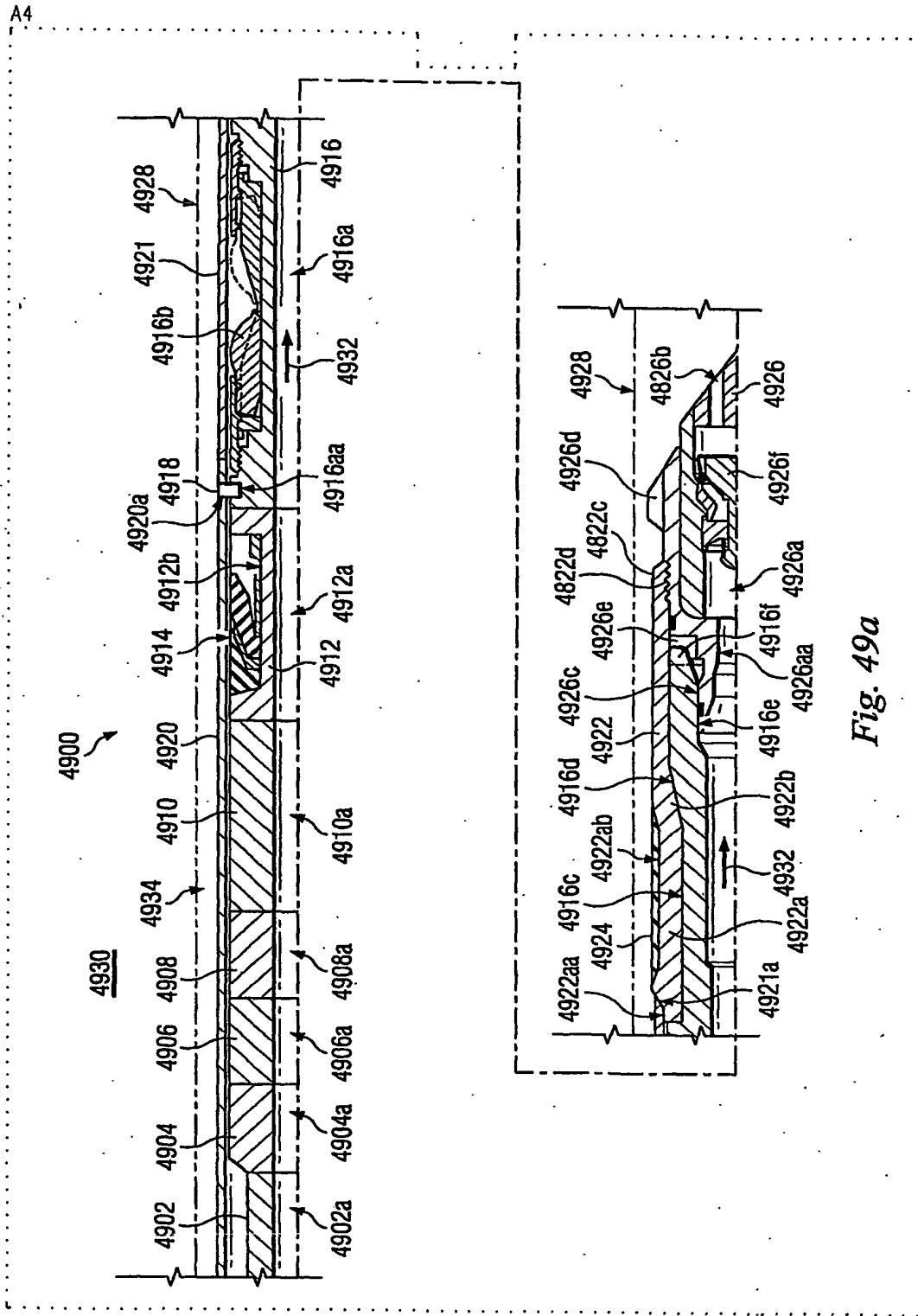
DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS



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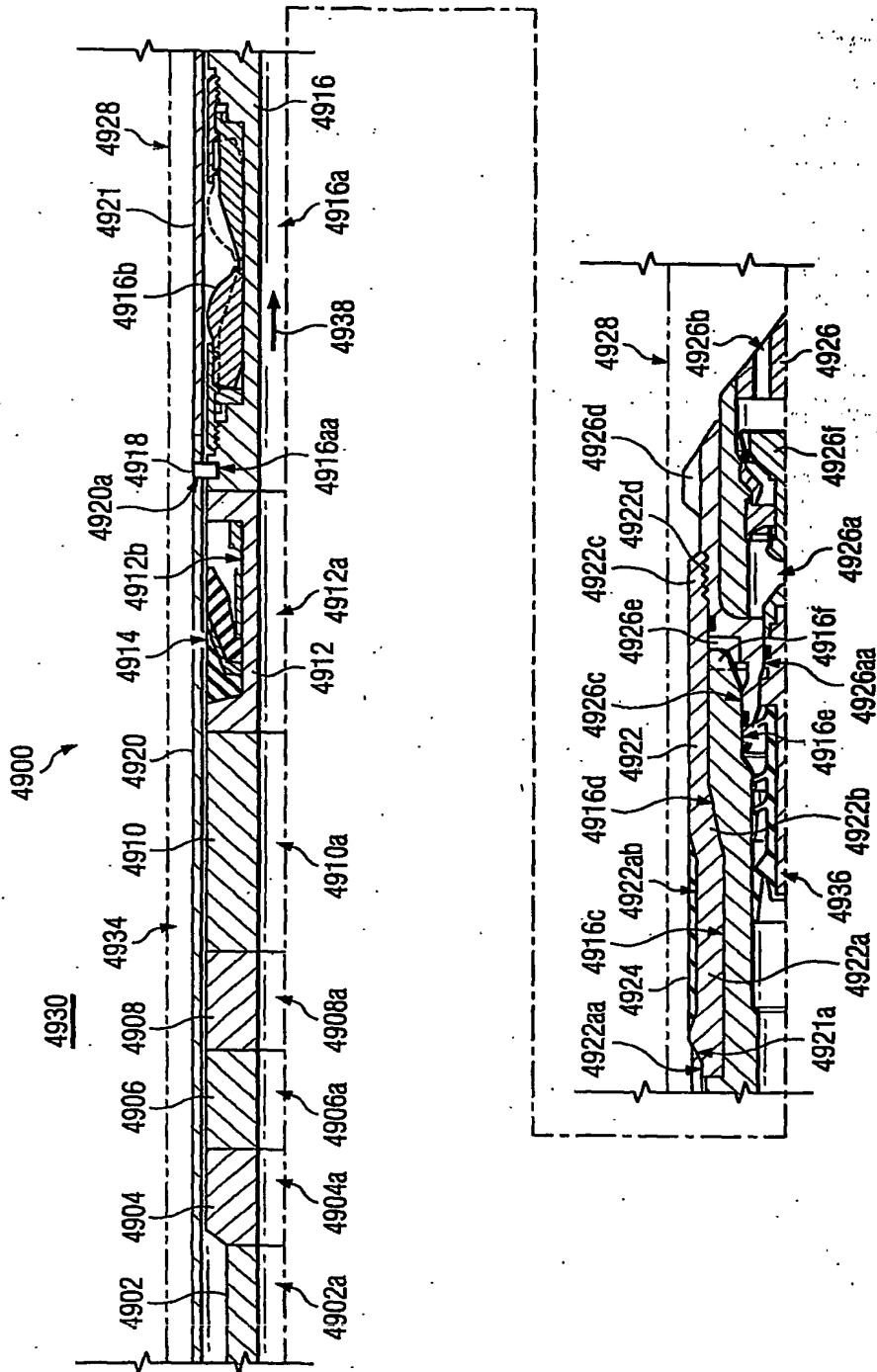
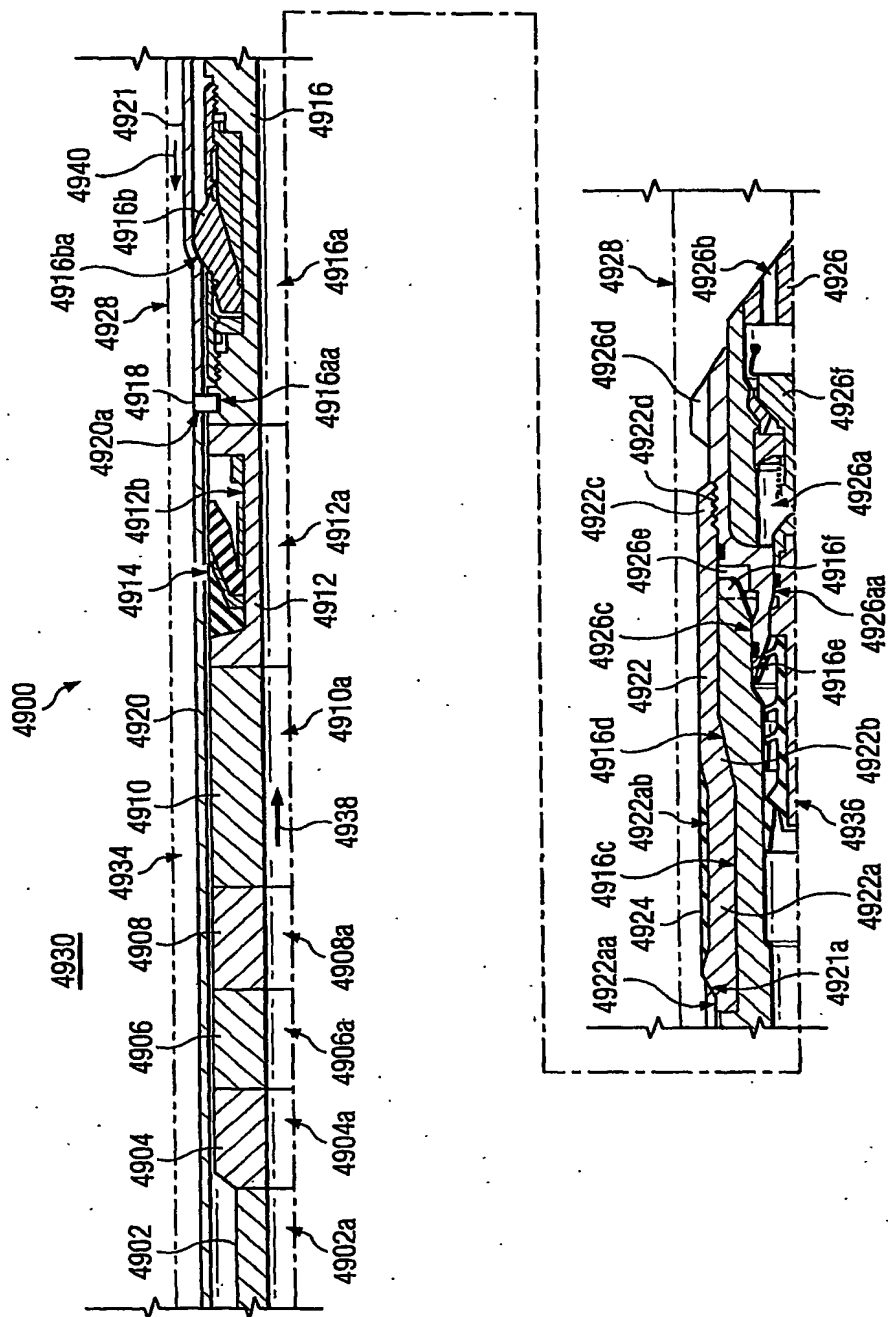


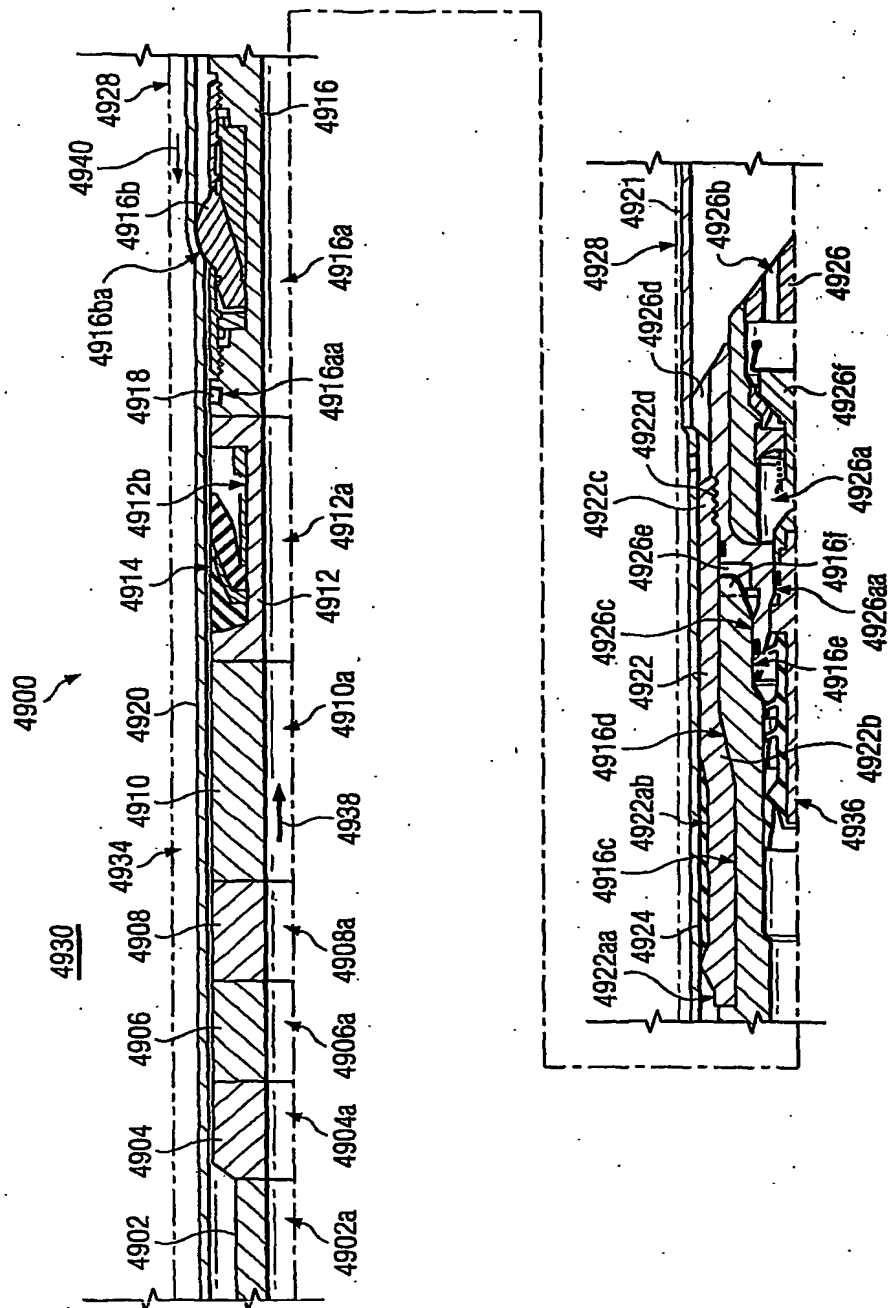
Fig. 49b

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

CONTACT DRUGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATIENT FIRST FOR SAME-DAY DELIVERY OF FINAL DRUGS



ORDER DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS



PROTECT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

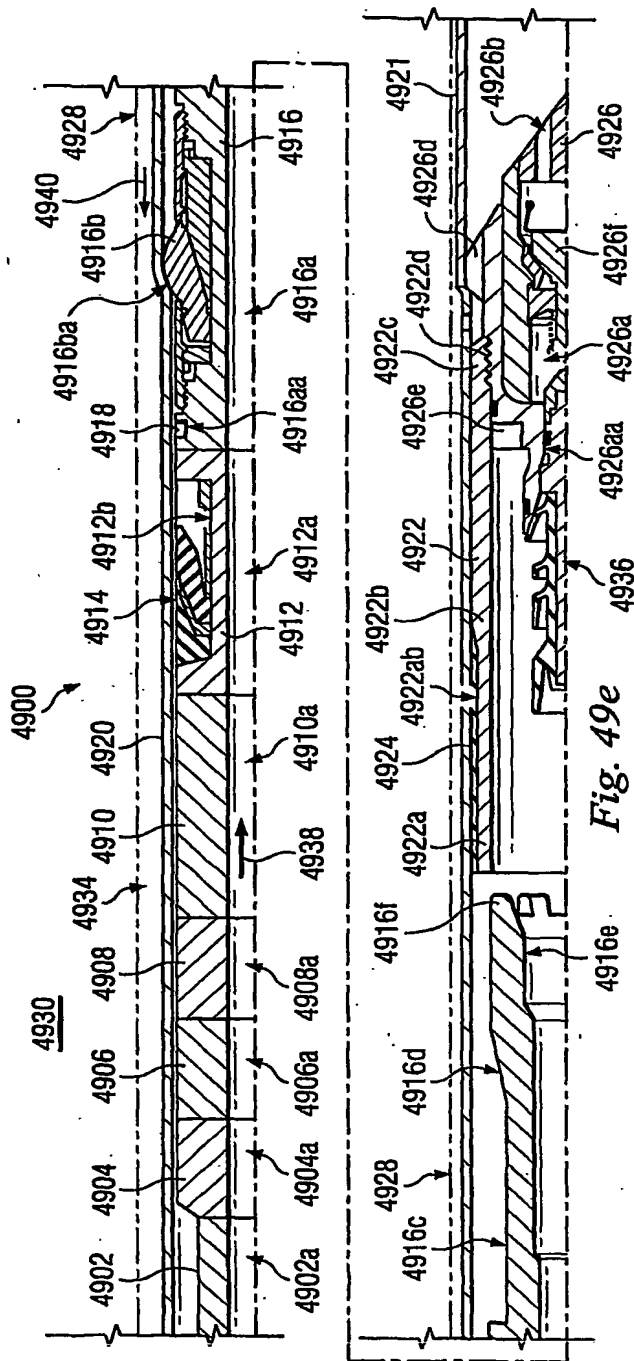


Fig. 49e

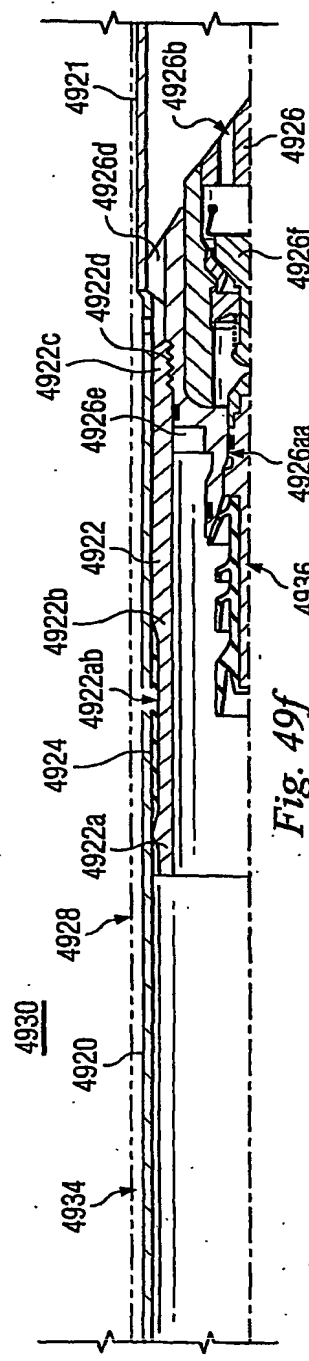


Fig. 49f

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

A4

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

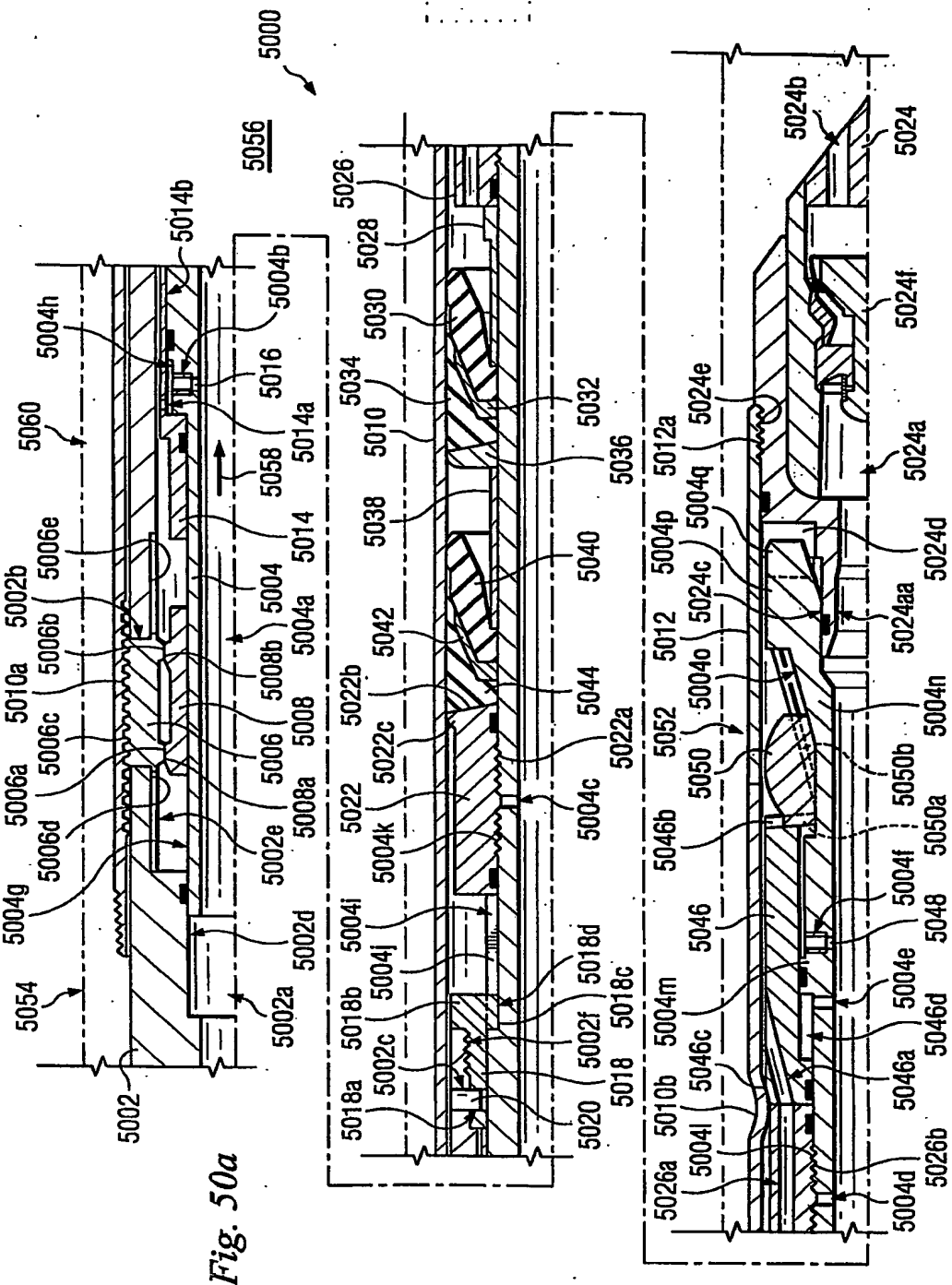


Fig. 50a

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

DR-PT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

DRIFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

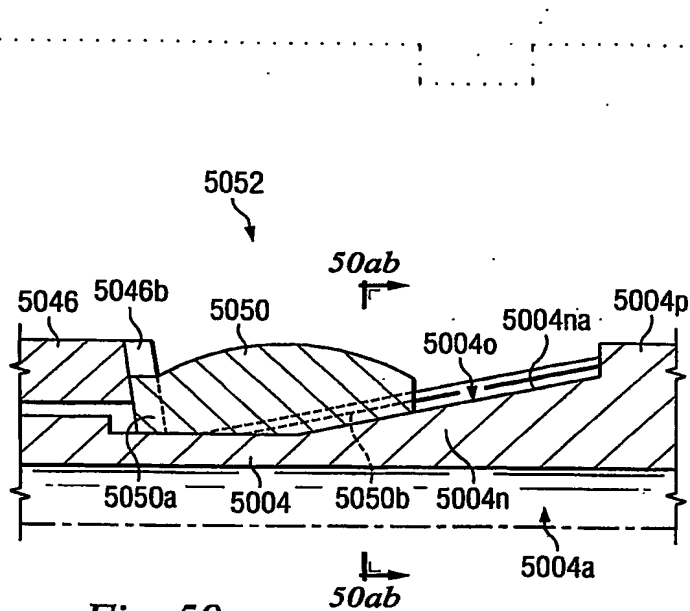


Fig. 50aa

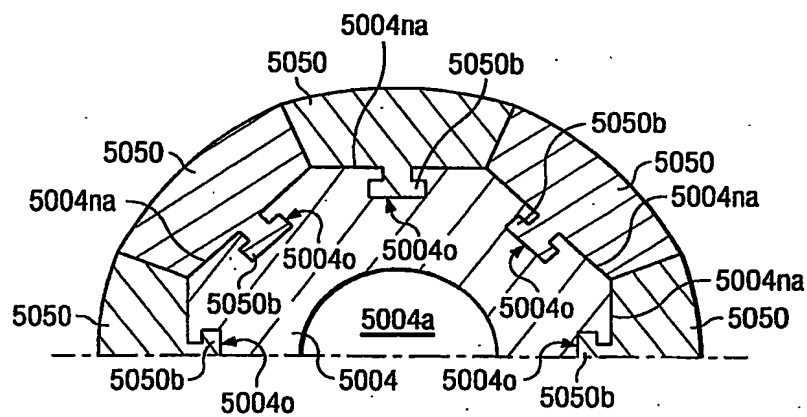
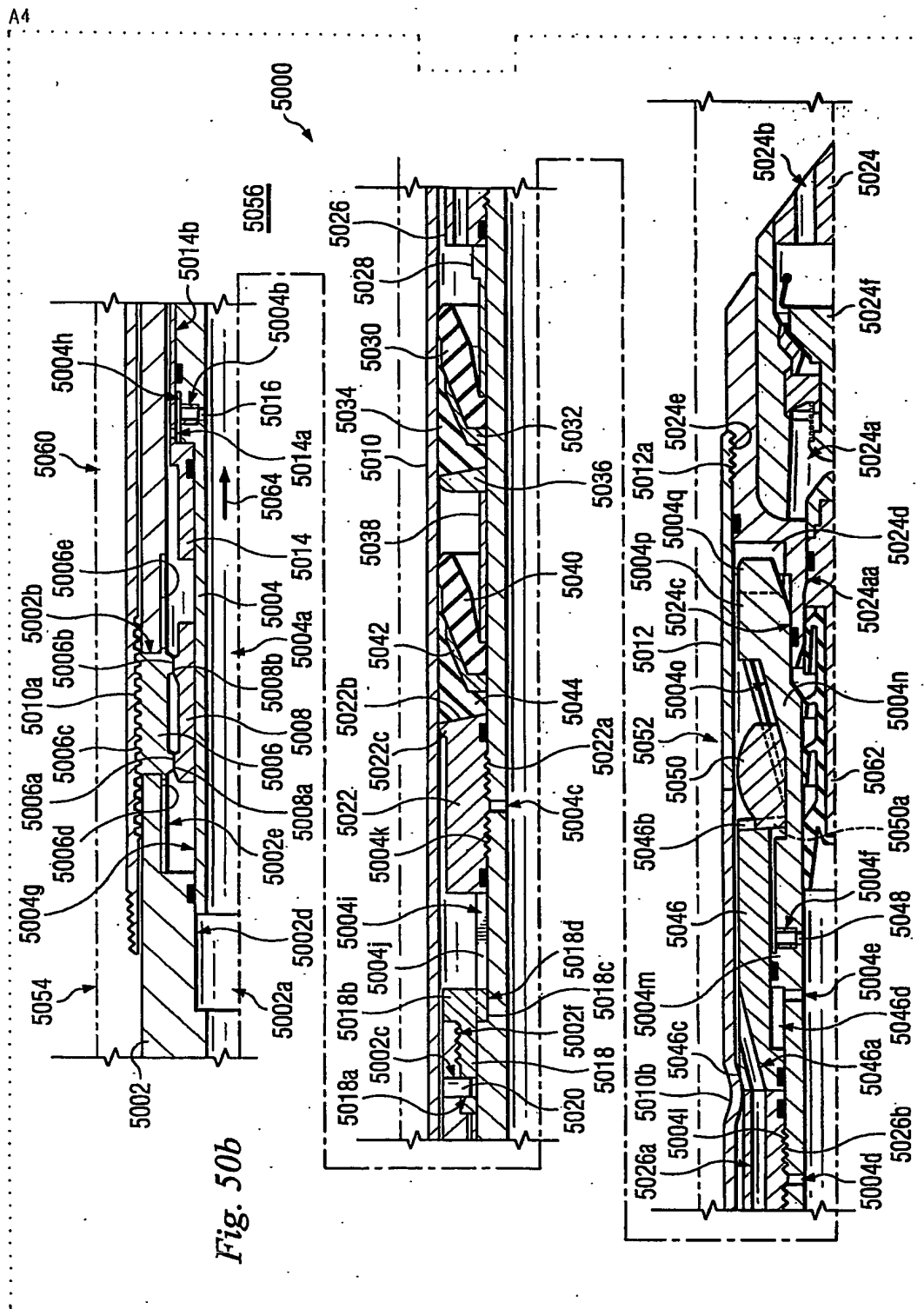
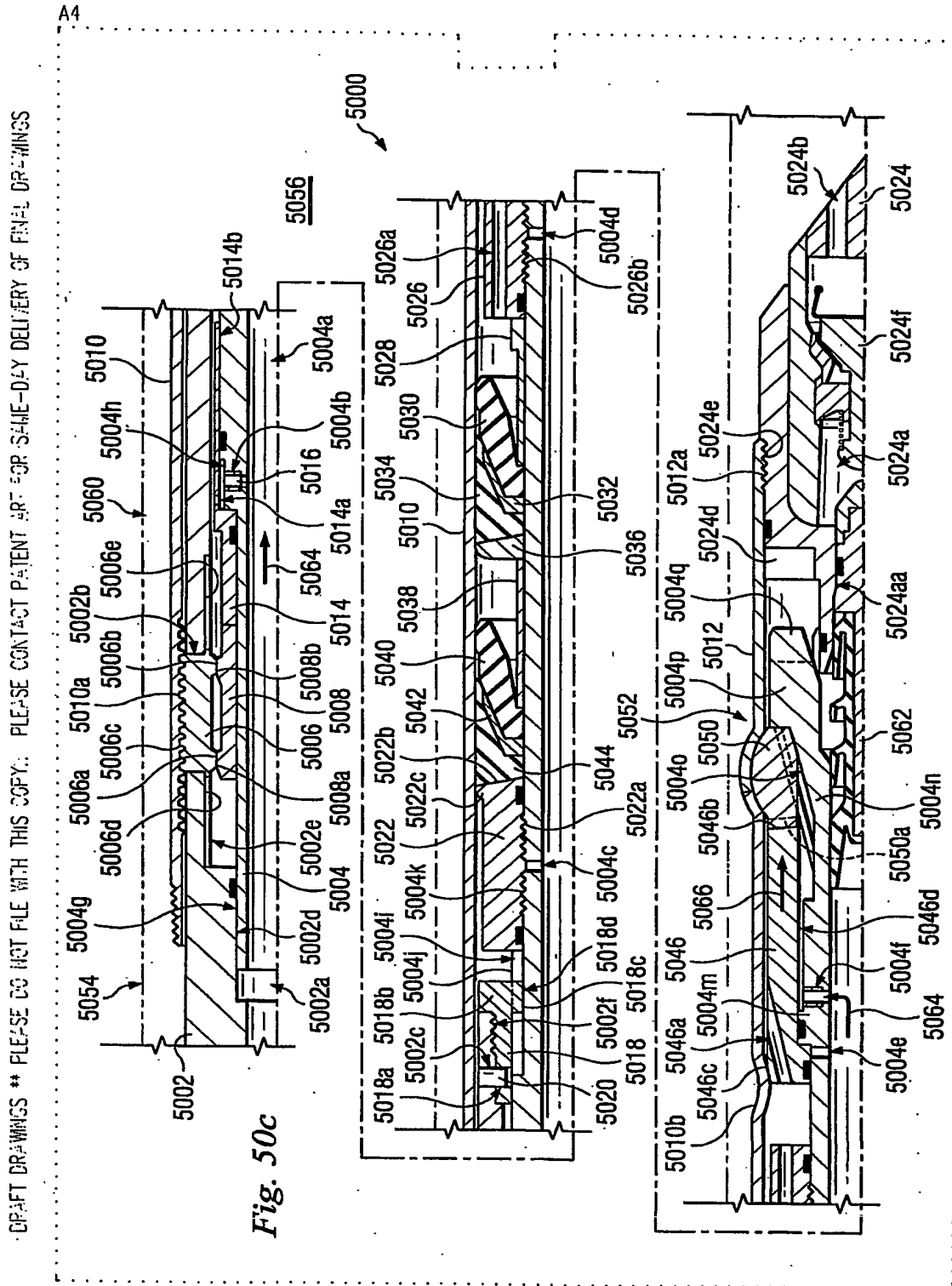


Fig. 50ab

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS





A4

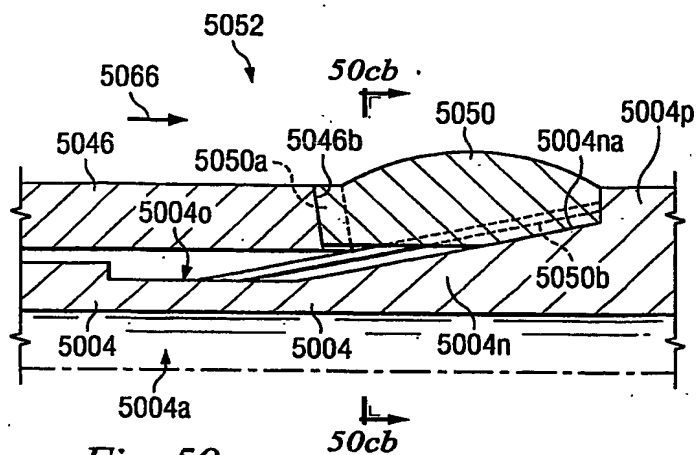
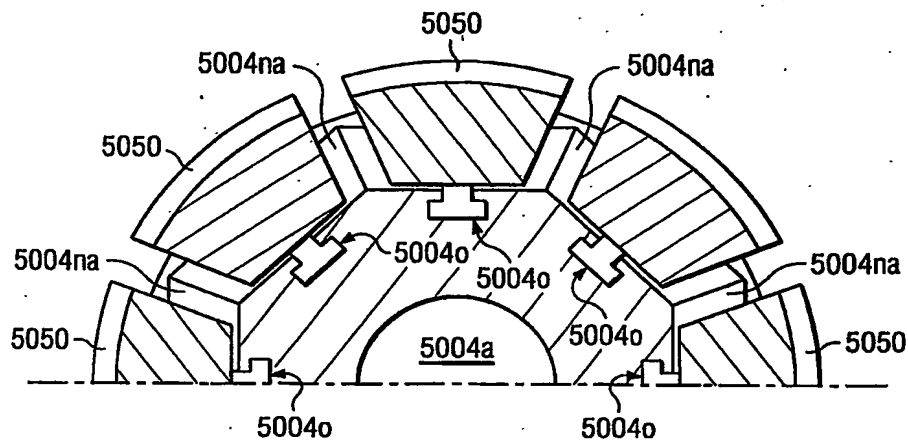
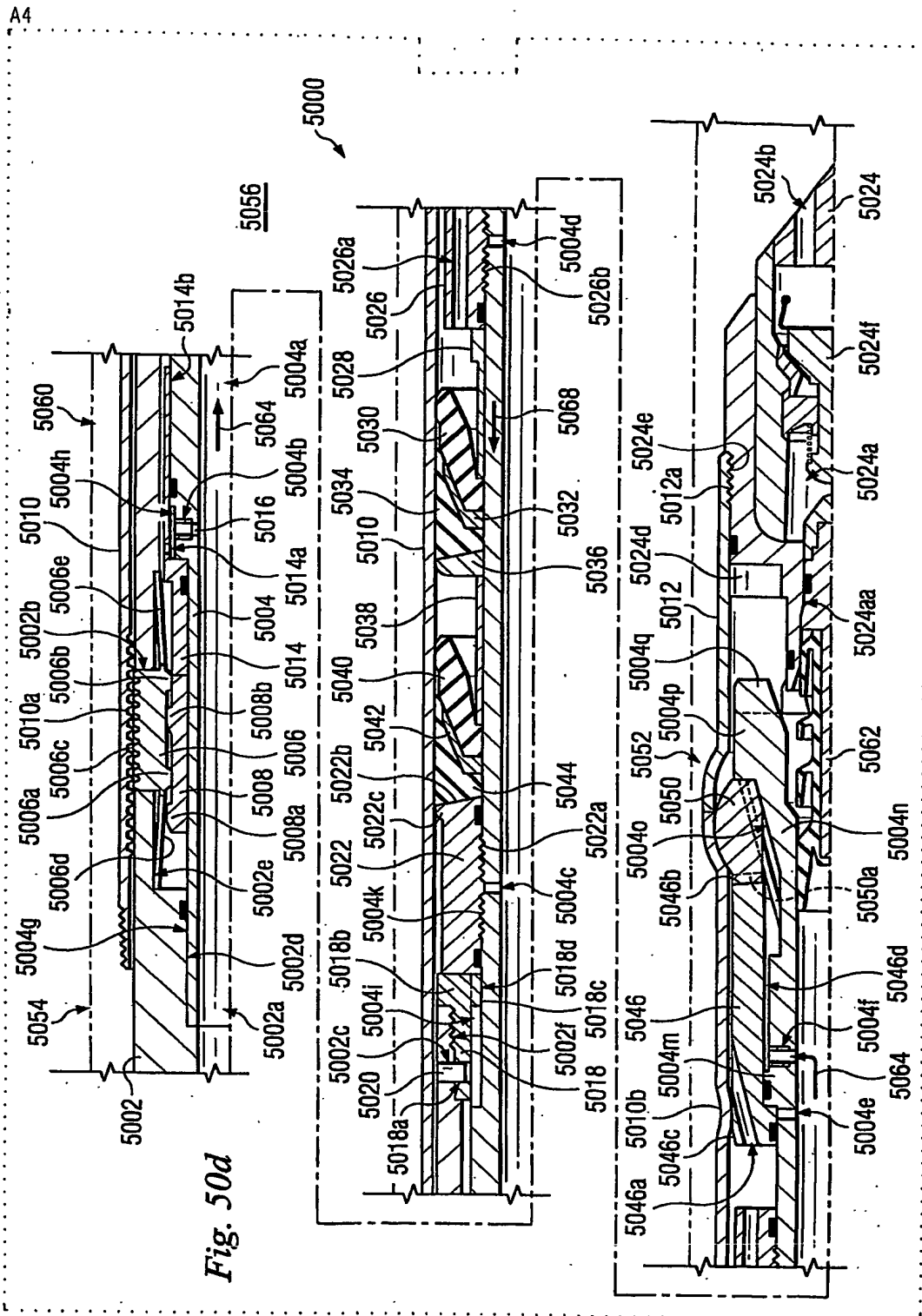


Fig. 50ca



DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATIENT APT FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

Fig. 50d



DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

A4

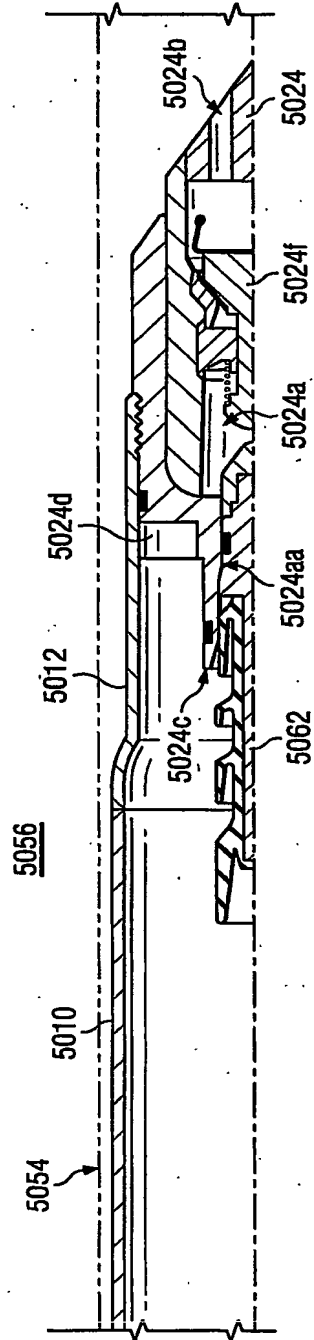


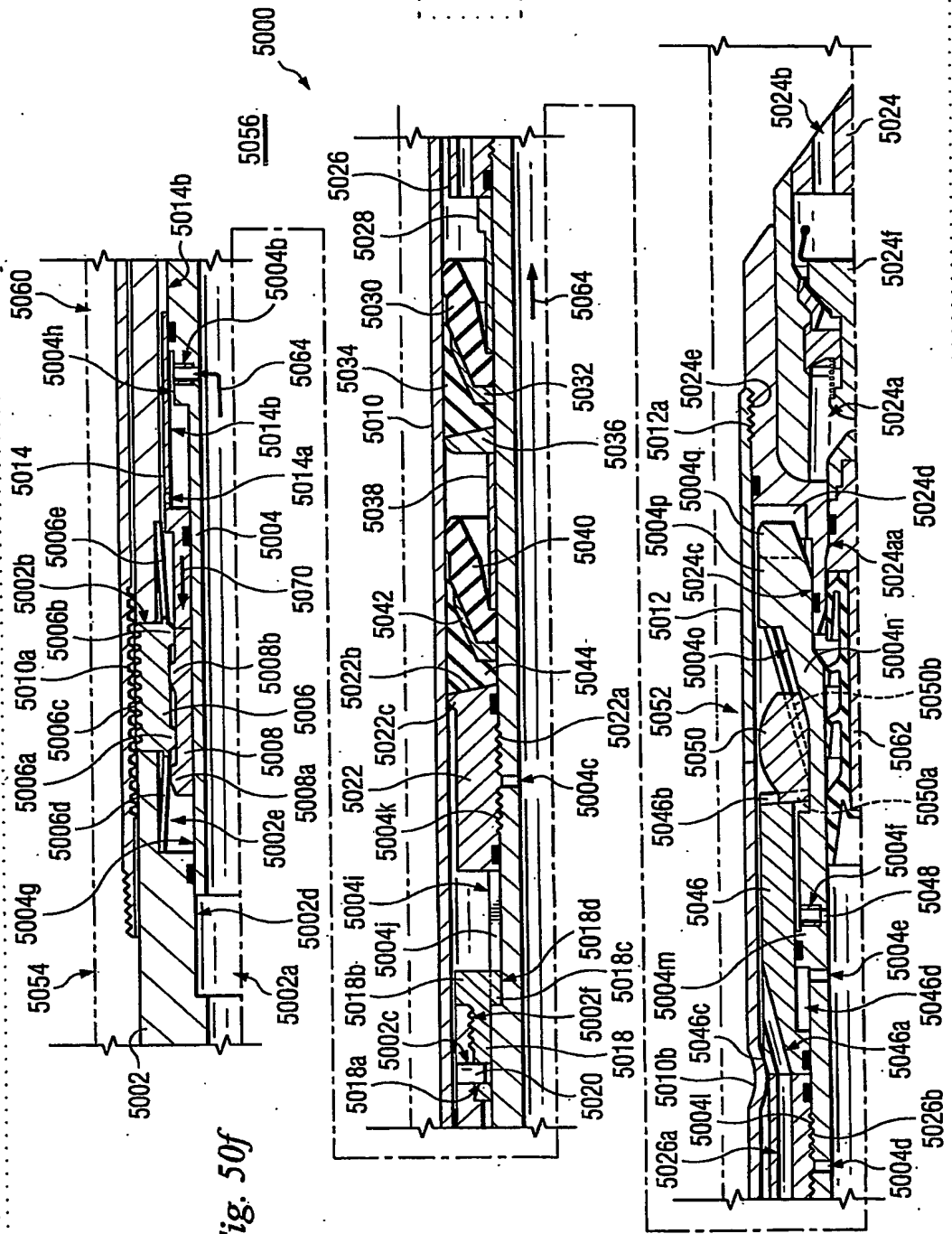
Fig. 50e

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

A4

DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS

Fig. 50f



DRAFT DRAWINGS ** PLEASE DO NOT FILE WITH THIS COPY!! PLEASE CONTACT PATENT ART FOR SAME-DAY DELIVERY OF FINAL DRAWINGS